THE MILKEN INSTITUTE
Review
FIRST QUARTER 2000
A JOURNAL OF ECONOMIC POLICY

MERGER MANIA

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THE MILKEN INSTITUTE REVIEW • FIRST QUARTER 2000

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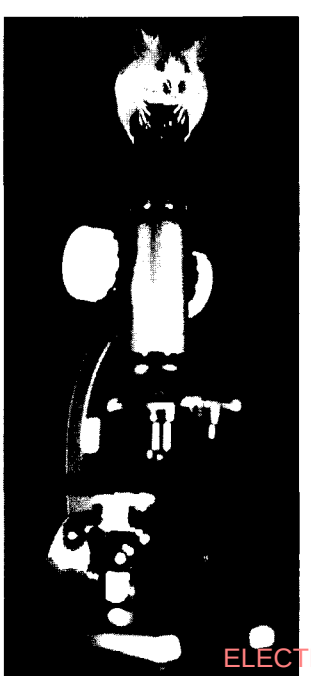

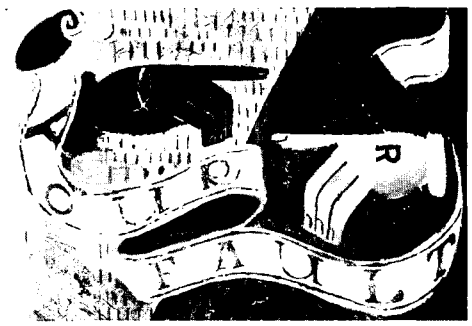

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It's been a whole year.

Are we having fun yet? Believe it or not, *The Milken Institute Review* is celebrating its first anniversary – and with what I hope is the best issue yet. Settle back, toast us in bubbly and prepare for enlightenment. Or whatever.

Richard Medley and **Matthew Saal** of Medley Global Advisors in New York do a postmortem on the WTO meeting in Seattle. Yes, it was a royal screw-up. No, it won't set back trade liberalization very much – merely change the arena in which it will take place.

The era of the great multilateral negotiation is coming to an end, they say. But, in sharp contrast to Jagdish Bhagwati's view in the last issue of *MIR*, Medley and Saal believe that globalization provides all the incentives needed to sustain the trend toward ever greater trade liberalization. "Letting trade policy be driven by economic need rather than political intentions," they say, "may not be such a bad thing."

Irwin Stelzer, director of regulatory studies at The Hudson Institute, takes aim at the CEOs who've followed the merger bandwagon as a means of disguising their own mediocrity. "Very often," Stelzer writes, "the goal of a merger is the unsurprising and not entirely laudable one of job retention. Having failed to improve a company's performance, an imperiled executive can put together a headline-grabbing deal that shows the time spent on the golf course was not in vain."

But Stelzer, who moonlights as a columnist for *The London Times*, offers consolation. "Most mergers create little threat to competition," he says: "if the much-abused term 'globalization' means anything, it is that most companies face vigorous competition from overseas rivals."

Kevin Murphy and **Robert Topel** of the University of Chicago's Business School offer one of those rare economic insights that can move public policy. Economists routinely work with "value of life" calculations – estimates from individual behavior that suggest how much life is worth in dollars and cents. Murphy and Topel use those estimates to measure the value of extending life through medical intervention.

Their numbers are breathtaking. They conclude that "improvements in life expectancy alone – i.e., ignoring the benefits of improved quality of life associated with decreased morbidity – added approximately $2.8 trillion per year to national wealth between 1970 and 1990."

Nick Eberstadt of The American Enterprise Institute, a sometime demographer specializing in irony, reports on the latest twist in population growth. Not merely has the population bomb been defused, he says, there's reason to believe that the global population will soon begin to fall. The trend toward low birth rates has spread far beyond Europe, where it began. Even very poor countries such as

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Kenya, long viewed as hopeless cases by Malthusians, are experiencing very rapid declines in fertility.

Is that good news or bad news? "Long-term population decline under conditions of steady health improvement," Eberstadt argues, "is not a disastrous demographic phenomenon – any more than were the 20th century's dual explosions of population and health. But an orderly global depopulation would require strange new adjustments – some of them wrenching – in both economies and societies."

Steve Cohen, **Brad DeLong** and **John Zysman** of the University of California at Berkeley take a shot at answering the question of the hour: are the good times brought on with the New Economy here to stay?

For insight, they look back to earlier episodes of technological discontinuity. And their bottom line is surprisingly upbeat. "We think there is a very good chance," they write, "that 100 years from now, people will look back at the current wave of innovation" and conclude that it fundamentally changed our economic prospects.

Tim Taylor, of the University of Minnesota's Humphrey School of Public Affairs, takes a hard look at President Clinton's economic record as the administration enters its eighth year. He is not about to give Bill much credit for the uninterrupted boom and serendipitously low unemployment rate. Running the economy "is like pointing out that you can steer a Flexible Flyer careering downhill," he writes. "In the end, gravity has more to do with where you end up.

"Clinton has played the game competently," he concludes, "but nothing in Clinton's economic record reaches beyond competence, which is why his economic record is only a notch or two better than ordinary."

Al Fishlow, an investment banker at Violy, Byorum in New York who looked after Latin American economies for the State Department in the Carter years, brings us up to date on the state of global economic play. The financial crisis is over, he proclaims, and the existing financial architecture did a creditable job of preventing a slide into depression. "Nostalgic for the years of living dangerously?" he asks. "Be thankful we have the chance to worry about lesser matters."

The book excerpt is from *Government's End*, an update of **Jon Rauch**'s earlier work, *Demosclerosis.* But this hardly constitutes sloppy seconds. Rauch, a distinguished Washington-based journalist, expands on his original thesis that interest group influence undermines economic growth and efficient government. How, he asks rhetorically, can we live – even thrive – in a polity so compromised?

By accepting the tendency of mature political systems to collect barnacles, and by fighting one modest step at a time to keep the ship of state moving forward.

"The end of government is a sad time if you happen to be a liberal idealist or a conservative revolutionary, for whom nothing less than a new dawn will do," Rauch writes. "For the rest of us, it is a time of maturely diminished expectations combined with maturely persistent ministrations."

There's much, much more, of course: Milken Institute views by **Ross DeVol** on the impact of biotech on regional economic growth and **Hilton Root** on the political economy of growth in emerging market countries; a charticle on the puzzle of translating national income statistics into numbers that allow international comparisons of living standards; and Ekinomix – cartoonist **Mark Alan Stamaty**'s edgy take on how the world works.

Write to praise, to pummel or just to palaver (ppassell@milken-inst.org).

— Peter Passell

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BY RICHARD MEDLEY AND MATTHEW SAAL

Even the most determined optimists are having a hard time finding the silver lining in last December's failed World Trade Organization meeting in Seattle. But viewing the outcome as the sad end to a 50-year process of trade liberalization would be a mistake.

For in their analyses of the so-called debacle, policy pundits have missed the real story: Seattle was a failure of trade politics, but since trade is ultimately about economics, it will take a lot more than a botched summit to slow its remarkable expansion. The bottom line is that the economics of integration are too strong to be stopped by the lack of political will.

Certainly the disappointment that lingers stands in stark contrast to the jubilation that greeted the news of the US-China trade liberalization deal just a few weeks earlier. In fact, we may eventually look back at China's entry into the WTO as the organization's swan song – though, by then, it may not matter. The WTO is an old-style international institution whose energy depended in part on cold war ideological conflict, whose value is subject to diminishing marginal returns and whose jurisdiction will be increasingly circumvented by the new political and economic world order.

In a perverse way, one could even take heart in the demonstration in Seattle that non-governmental organizations and small countries have finally found a way to make their voices heard in the previously exclusionary halls of international trade diplomacy. With the WTO hobbled, future progress will occur not at the global level, but at the regional and bilateral levels, because economic incentives will ultimately overwhelm political intransigence.

RICHARD MEDLEY is the CEO and MATTHEW SAAL is managing director of Medley Global Advisors, which advises money managers on political and economic risk.

CLOUDS WERE NOT JUST TEAR GAS

Realists never expected much from Seattle. Indeed, at a recent conference of international trade lawyers, the question on everyone's lips was, "Whose stupid idea was it to hold the talks in the US in an election year?"

While the outcome was worse than most expected in terms of atmospherics, it was not far from the pessimistic predictions that had preceded the event. It's worth going over some of the sticking points.

Start with the most basic. The organizers of international meetings usually agree beforehand on agendas if the meetings are intended as public spectacles. In the case of Seattle, however, even this modest goal proved elusive.

Japan and the European Union wanted a broad agenda for the next round of trade

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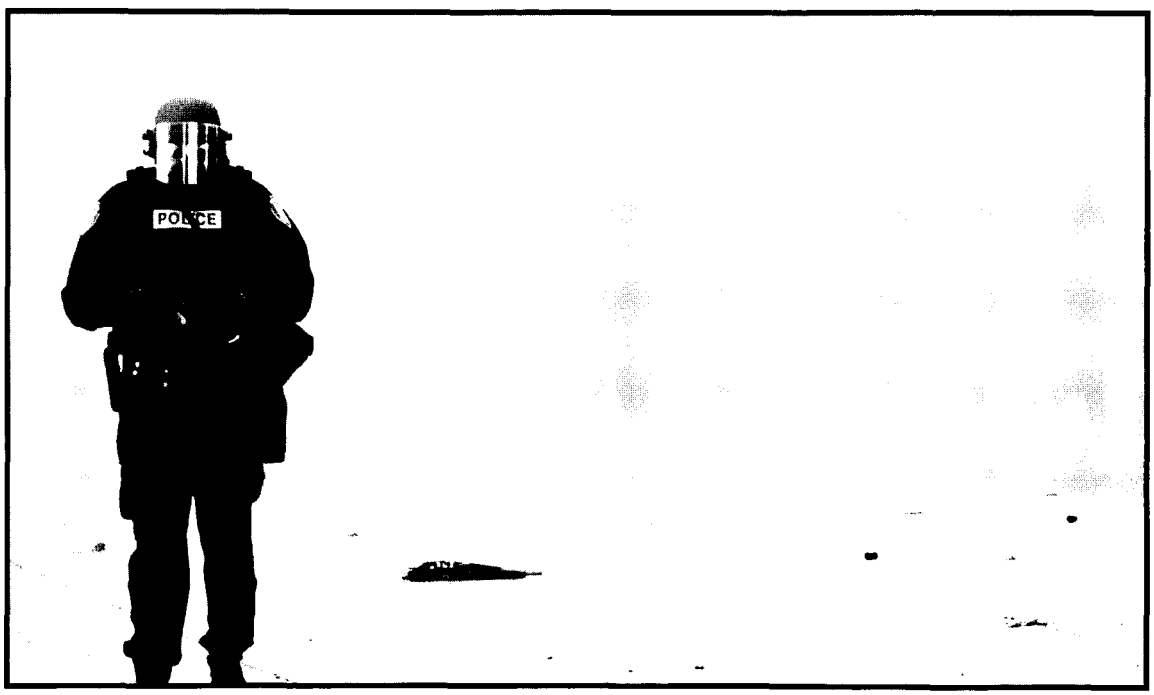
negotiations, one addressing not only rules and discipline and trade liberalization, but also newer issues such as e-trade, bioengineering and environmental protection. The US favored a narrower approach, stressing continued progress in the agricultural and financial sectors and limiting WTO scrutiny of US anti-dumping practices. US officials were particularly furious over the complaint that Japan has filed about US anti-dumping action against steel imports.

For their part, many countries in the developing world are reluctant to reduce tariffs further and are particularly worried about agriculture and financial services. WTO efforts in the forestry and fishery sectors, with their attendant environmental overtones, are prime points of contention for less developed countries, while these countries' efforts to push for further textile openings will run up against equivalent resistance from the rich industrial countries.

Taking a step back from specific sectoral issues, the biggest official concerns right now are about the process itself: how long the next round should last; how much can realistically be accomplished in that time; how much to focus on broad trade rules as opposed to sectoral liberalization; how far to proceed while implementation of the Uruguay Round accords remains incomplete.



TIM MATSUI/LIAISON AGENCY

Debating the issues in Seattle.

Many observers felt that the plug should have been pulled on the Seattle meetings when the date approached and there was still no agreement on an agenda – really a "meta-agenda," since the meetings were not trade talks, but talks about what to talk about. Such a move would have cost the city some hotel

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bookings, but it probably would have turned out to be cheaper than containing the riots.

If the delegates had come with a concrete set of objectives, then the non-governmental organizations, concerned citizens, thoughtful doubters and loony hangers-on who converged in Seattle might have proved less destructive. For the most part, the protestors pushed an agenda of populist protectionism under the guise of environmental protection, labor standards and human rights. Business interests were also represented, but they weren't sufficiently organized to grab headlines from the Granola Gang and their union allies.

The US is shirking responsibility as a world leader and is failing to expend energy on 'international public goods.'

It should have been obvious that the Clinton administration would not risk upsetting labor interests, whose endorsement the Gore campaign had fought so hard to win. Labor lobbyists, of course, had been proclaiming their bitter opposition to any trade agreement that didn't include "core labor standards." Needless to say, they weren't on the agenda of developing countries.

But above and beyond the exigencies of pre-election Presidential politics, there is also a growing impression that the US is turning inward. "The US is shirking responsibility as a world leader and is failing to expend energy on 'international public goods,'" one top Japanese trade official complained before leaving for Seattle.

Going into the talks, delegates also knew that without a meaningful "fast-track" process requiring swift up-or-down approval, the US would be incapable of striking a bargain that could get through Congress. Thus, the short-term local political dynamics as well as the longer-term isolationist trend fatally undermined US leadership.

Not that the blame should rest solely on the United States, though. The question of labor rights was not the only deal-breaking issue. Talks also foundered on market access, tariffs, anti-dumping rules and agricultural protection. The US may have been caught in the crossfire of domestic politics, but flexibility was not exactly the watchword in other camps, either. For example, to the great frustration of virtually everyone else in Seattle, European Union representatives refused to enter a trade round that would even broach the prospect of eliminating agricultural subsidies.

STORMY WEATHER IN GENEVA, TOO

It is important to remember that the WTO (formed in 1995 as the successor organization to the postwar General Agreement on Tariffs and Trade) has long been a deeply divided organization, whose members could not even decide on a new director-general to replace Renato Ruggiero. At the end of the day, the members of the developing and developed worlds disagreed so fundamentally and distrusted each other so thoroughly that they could agree only to appoint two directors-general to share the term of office. Thus we have Michael Moore of New Zealand running the show for now, with Supachai Panitchpakdi of Thailand waiting in the

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wings for September 2002.

With developing/smaller countries worried the WTO is simply a vehicle for US and European parochialism; the US, Europe and Japan far apart on key issues, and Moore a virtual lame duck at the start of his term, Seattle was doomed from the outset. Unfortunately, trade diplomats couldn't find a way to cut the baby in half, as they did with the directorship impasse. For the next round, the divisions are much broader and more difficult to paper over.

WTO: ABOUT TO BE OBSOLETE?

Some suggest the WTO is too inclusive to be a community with common interests. That may be true in part. But the raison d'être of the organization – and the basis for its success to date – has been the capacity to find common interests where they are not obvious. In fact, the blossoming of stronger civil societies in the developing countries, and the tutoring they received from non-governmental organizations in making their demands heard, is the only real success story in Seattle. A more comprehensive explanation for the failure of the talks, however, is that the WTO is a victim of the law of diminishing returns, increased regionalism and the end of the cold war.

The very success of the WTO means that the incremental return from further trade liberalization is modest. Trade barriers are way down from the 1970's perspective, and the China agreement brings the last major economy into the rules-based trading system. The big prizes have thus been won and, in the view of many, it's not worth the effort to wrestle in multilateral forums for the smaller ones.

Now that a critical threshold of openness and (more or less) rule of law has been adopted by most countries, one member reducing tariffs must accept the exports of the whole group – and may get only increased competitiveness for one industry of its own in return. Further progress thus must deal with thorny issues affecting individual sectors and even specific companies.

At the same time, regional trade blocks have become more significant. The EU, Mercosur in South America and the North American Free Trade Agreement all have a more direct and tangible impact on their members than the WTO, shifting the focus of trade policy to the bilateral or inter-regional level. These sub-WTO trade groups also have the coherence (or, at least, large-enough key players) to impose sanctions, allowing enforcement mechanisms that work without consensus.

Regionalization devalues the broader multilateral arena except as a forum to whine about things when the bilateral or inter-block efforts stall. For example, the emergence of Europe as a bilateral partner/challenger is far more important to the US than any possible progress on access to smaller markets. Battles over meat and bananas and copyrights will be fought between Washington and Brussels first, with Geneva a venue of last recourse. WTO talks are all well and good, but trade-block members know the next arena is inter-block, and will focus their efforts on strengthening their own blocks and healing rifts where necessary (e.g., the Britain-France beef dispute in the EU).

Last but not least, the collapse of Communism means that the big political drivers of multilateralism have run out of steam. The postwar trade story was as much about securing trade access for geopolitical reasons as about the economic benefits that opening might bring. With the triumph of a capitalist model closely linked to open trade, the imperative to sacrifice domestic interests in the name of free trade and all its former

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geopolitical implications is gone. Why expend energy on what amounts to international public goods?

The paradox of a long period of stability and growth born in part out of trade and capital mobility is that domestic interests now hold sway – just as the late great Mancur Olson, the author of *The Logic of Collective Action*, always told us they would. Despite strong overall growth, concern remains about the hollowing out of manufacturing sectors in the US and Britain (and that goes double for the industrial countries still grappling with double-digit unemployment). The last major play of the trade card for global geopolitical purposes was made to bring China into the fold.

Sure, the few remaining North Koreas and Cubas of this world have yet to be won over, but who really cares about them?

Put simply, regionalism has more force than global geopolitics in the post-cold-war world. Trade will remain a tool for regional politics, spurring more interest in the EU, Mercosur, the Free Trade Association of the Americas, etc., than in the WTO. Bilateral deals will still make sense. It is noteworthy that China and Brazil inked a tariff-reducing agreement in Seattle – even as the tear gas swirled around the city – and within a week of the collapse of the WTO talks, Japan and Singapore announced that they would begin studying a bilateral free-trade agreement.

Sure, the few remaining North Koreas and Cubas of this world have yet to be won over, but who really cares about them? Incentives for a large developed country to make concessions to smaller countries have all but disappeared, because small countries can rarely give as much market access as they get. The focus is bilateral – or on competing trading blocks, where there is real danger of trade diversion and real opportunity if barriers can be brought down.

There is no great world power willing to absorb the costs of international cooperation. The single remaining superpower has no need to, and its actual dealings with the only other contender for leadership in trade – the European Union – will inevitably be bilateral. Emerging markets know how little bargaining power they have; that's why they were so desperate to control the WTO leadership. Other nations know their best bet for progress on anything from free-trade areas to dumping to bad beef is bilateral talks.

DOES IT MATTER?

Some may applaud the news that another international bureaucracy is ready to go into deep freeze. We would hold the applause, though – and not just on the grounds that trade bureaucrats will continue to feed at the public trough, whether or not they accomplish anything. In the case of international trade, the law of organizational entropy looms large: lack of cooperative progress tends to result in deterioration. Without constant dynamic strengthening of the WTO multilateral process, we are likely to see ever more bilateral disagreements and forced "settlements," ever more protectionist wolves prowling in the sheepskins of labor protection and environmentalism.

We should also care about a loss of

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momentum because even standing still (were it possible) would be an opportunity lost – an opportunity to integrate more fully the cusp economies of the African Maghreb, southeast Asia and Latin America into the developed world. Such integration is necessary (but not sufficient) to keep them on the path toward sustainable growth and income levels that will make them not just contributors to the world's supply of goods and services, but symbiotic consumers of the developed countries' products. As populations in the developed world grow grayer, only the continuing integration of new regions into the global consumer economy will power growth in the next century.

PROGRESS WITHOUT VICTORY

Who won the Battle of Seattle?

One claim of victory will come from cynics who don't believe international organizations can accomplish anything. Yet, the WTO lives on. Its built-in agenda, set aside from the Uruguay Round, kicks in next year, and in due course trade negotiators will meet to try again to set a new agenda.

There was no winner among the delegates themselves: while each country may have successfully defended its principles and narrow interests, none would have been in Seattle if they felt that autarky was in their best interest.

The protestors think they won, but that victory is likely to be as evanescent as sunshine in the drizzle capital of the Northwest. Sure, they helped poison the atmosphere, but that is not what ultimately scuttled the round. Antitrade groups benefited from negotiators' lack of political will, but the changes they sought to prevent will occur anyway.

Countries that have adopted the liberal, capitalist economic model cannot avoid cross-border sharing of resources. Given the lack of political will, internal needs will have to be the drivers of change. For better or worse, those needs remain great.

Crisis-wracked countries in Asia and elsewhere are looking for deep pockets – foreign owners – to recapitalize financial institutions and to take stakes in local companies. From Korea to Thailand to Mexico, the doors have been opened from the inside. It should come as no surprise that, within just a few weeks of agreeing to open its financial sector under the WTO, the Chinese government is considering getting some of the incoming capital for its own coffers by privatizing its bankrupt state banks.

An entirely different class of internal need is evident in the Indian computer software industry, for instance, which has learned how to keep jobs at home by exporting intermediate software services instead of exporting skilled laborers. Knowledge-based industries have joined financial capital in being virtually stateless. But the influence extends beyond the affected sector. Bangalore represents more than just a successful export industry; it has irrevocably shattered the autarkic trade and development model in India. Eventually even the EU (and the US and Japan) will succumb to a third class of need – one deriving from demographic shifts and the consequent incentive to reduce dependence on goods and services produced at home.

These economic forces at the national, sectoral and company level mean that cross-border integration will continue, business by business and acquisition by acquisition. The global businesses and globally aware consumers of the Internet era will not be held back easily by borders or protesters. So long as governments don't develop new ways to block that progress, letting trade policy be driven by economic need rather than political intentions may not be such a bad thing. M

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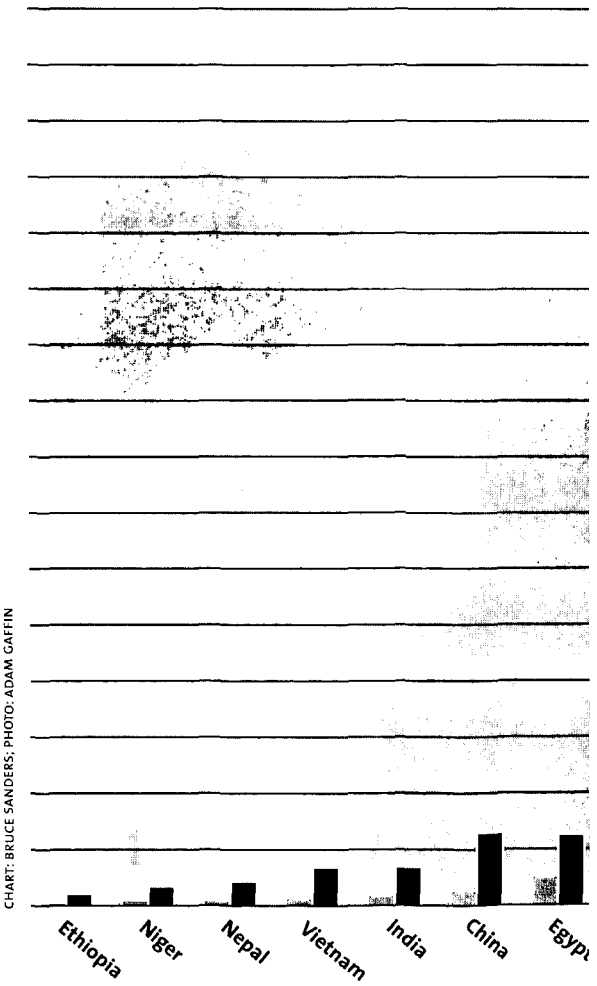
Quick. Which country has a higher per-capita income: Norway or the United States? Switzerland or Singapore? Japan or Belgium?

Yes, those are, indeed, trick questions. For the answers depend on whether you are comparing incomes according to international currency exchange rates or according to "purchasing power parity" – the value of the currency when buying the whole range of traded and untraded goods and services. Purchasing Power Parity, the lesser-known index, tells you a lot about relative living standards. So it is not surprising that the World Bank puts a lot of time and effort into measuring PPP.

A few things worth noting.

- Nobody really can survive on a few hundred dollars' worth of goods and services a year – which is why the PPP measure of income for extremely poor countries like Nepal and Niger is typically four or five times greater than the pittance measured at exchange rate parity.
- The United States looks a whole lot better in PPP terms than in exchange rate terms, which is why travel in northern Europe and Japan is so expensive for those of us who get our paychecks in dollars.
- The Chinese economy, which looks pretty big to dollar-bound exporters, looks much, much bigger from the inside. Indeed, with a PPP per capita GNP of $3,200 it is the second largest economy in the world!



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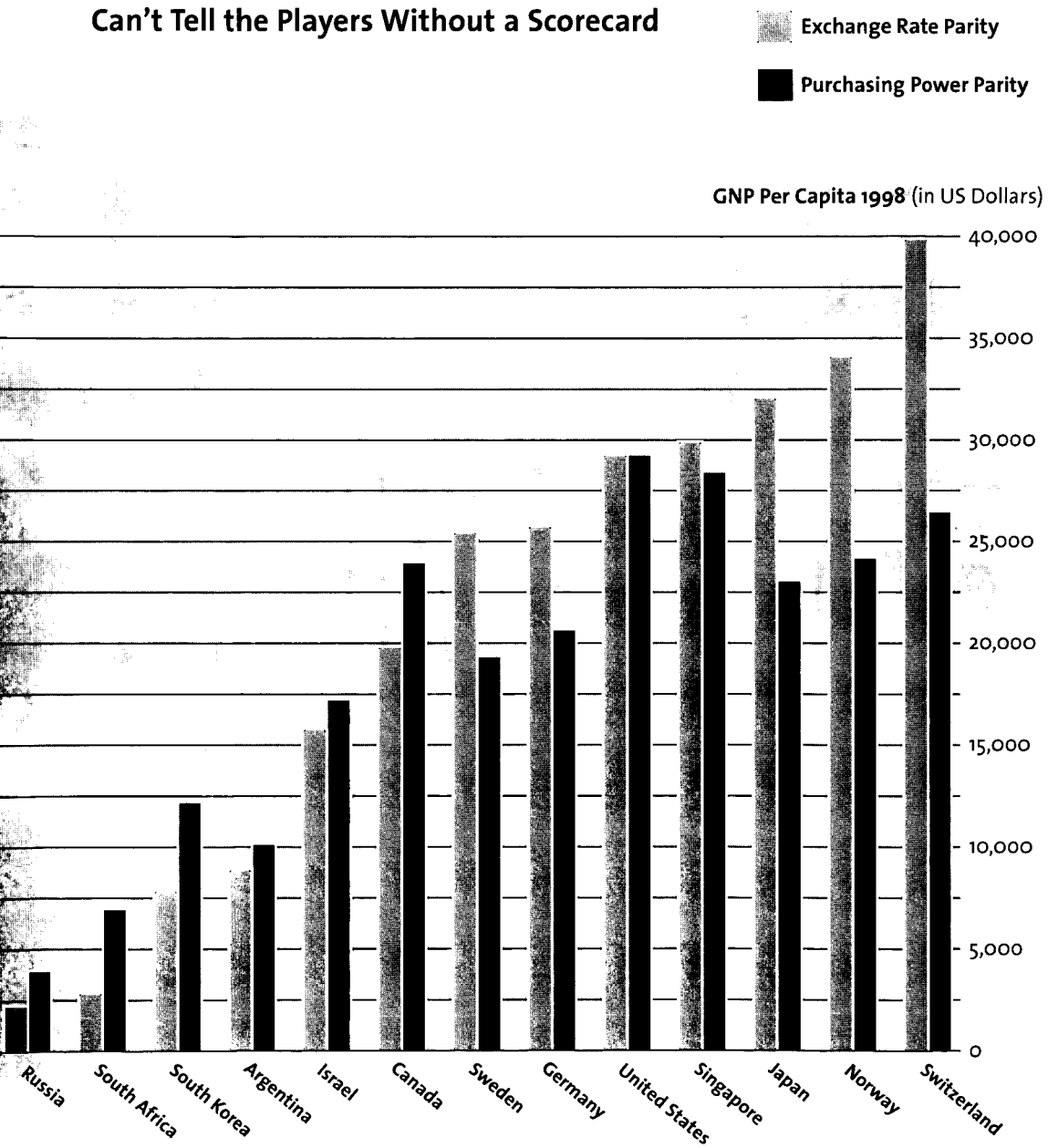
The Purchasing-Power Puzzle:

Can't Tell the Players Without a Scorecard



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MERGER

Take Two Lithium and

Another day, another billion-dollar merger. Or hundred-billion-dollar merger. Yawn. Time to turn the page to see how the Knicks are doing.

That's the reaction these days to even the largest of the mergers in the oil, telecommunications, automobile, pharmaceutical and electric utility industries. And with reason – three reasons, actually. First, there are just too many of these corporate marriages for any, save investment bankers or the most manic online investors, to track.

Second, the word "billions" has lost its shock value: there are simply too many gigabucks deals to elicit interest, much less awe. Indeed, investment bankers now categorize mergers in the $1 billion to $5 billion class as "mid-market." All in all, 1999 saw some $3 trillion in mergers, ahead of 1998's piddling $2.5 trillion. And it is probable that SBC Communications, which spent $72 billion for Ameritech last year, will not be the 1999 record-holder – not if Pfizer's bid ($80 billion) for Warner-Lambert goes forward.

Third, the reasons given by the public relations and financial relations experts who program their CEOs' appearances on CNBC are peculiarly unrevealing: We must get big to survive....In a globalized world we must be global....There are synergies to be had....The cost savings from this merger will be phenomenal.... Performance to follow (maybe). And never a mention of the fact that executive compensation is often influenced by the size of a company – especially if what economists call the psychic income provided by private jets, ski chalets and photo ops with world leaders is counted. Better to watch a good ball game than listen to these corporate executives trying not to explain what is behind their latest acquisition.

Very often, the goal of a merger is the unsurprising and not entirely laudable one of job retention. Having failed to improve a company's performance to the satisfaction of the board or key shareholders, an imperiled executive can put together a headline-grabbing deal that shows the time spent on the golf course was not in vain. Those contacts made at the 19th hole resulted in a merger that will "position the company for the future" – a sure sign that the executives involved would like you to forget the past.

Run out of ideas? Try a merger

By Irwin Stelzer

Then, too, a merger can be management's very indirect way of acknowledging error – admitting that it has committed resources to an industry that suffers from excess capacity. Firms in declining industries can either shut the door and walk away – the deserted factory depicted in *The Full Monty* is not the only one of its sort – or they can merge with rivals and trumpet a cost-cutting campaign – a dignified way of shrinking an enterprise without admitting the dreary truth.

After all, write-offs and downsizing reveal to one and all that previous decisions to invest and hire were a mistake. Better to sell the company, report the cost savings that will result, bank a golden goodbye from the acquirer, and leave, reputation as a manager intact and as a deal-maker enhanced. And not have to answer the obvious question: if there were operational efficiencies

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there for the taking, why does it take a merger to realize them?

Viewed in this way, merger is an elegant strategy. Take the case of British Petroleum's acquisition of Amoco in 1998, a deal that was heralded as a means of saving billions by eliminating redundant facilities. Indeed, so great has been the attrition at Amoco after its acquisition by BP and a $2 billion cost-cutting exercise that the industry joke is: How do you pronounce BP-Amoco? Answer: The "Amoco" is silent.

Or consider the banking industry, also the scene of a wave of mergers by firms in an industry bloated with excess capacity and desperate to hold on to customers who are

MANIA

Call Me in the Morning

increasingly self-sufficient in the services they once bought from banks. Small customers find that ATMs that never close are more convenient than branches, and larger ones can go directly to the markets for capital without stopping at their friendly commercial banks. Mergers have proved to be a handy way of withdrawing capacity from the industry without moving stockholders from resentment to rebellion.

Then, too, many mergers stem from management's desire to "buy the future" – a future it has failed to position its company to prosper in. That may well be behind the merger craze in the pharmaceutical industry, where profits depend on the ability of companies to turn out a steady stream of new drugs, at least some of them in the blockbuster class. Seeing nothing in its lab that shows promise, a company may decide to buy the future product stream of a rival rather than do the decent thing – that is, to shrink and begin returning money to the shareholders, leaving the field to those more efficient at the business of

research and development.

A.T. Kearney, the management consultancy, estimates that drug companies that have merged have created less value for shareholders than those that have not, prompting *The Financial Times* to note recently "there is a profound paradox here. The creation of value… is central to share price performance.

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And mergers, it seems, destroy value."

Even William Steer, the chairman of Pfizer, concedes that "most of the mergers we have seen have been made out of weakness." Not his bid for Warner-Lambert, he would argue, disagreeing with financial analysts who contend that Pfizer's move is a confession that, absent some acquisition, its growth prospects are dim. As *Business Week* put it in a recent survey of the industry's "frantic" merger activity, "even giants like Pfizer Inc. and Merck & Company don't have any obvious blockbusters in the wings."

This is not to pick on the oil, banking and drug industries. Or on mergers in general. For there are mergers and there are mergers. In the 1980's, when Michael Milken created junk bonds to finance takeover specialists, most high-profile mergers were hostile. Entrenched executives, grown fat on perks extracted from shareholders too fragmented to control their employee-managers, were displaced by debt-ridden entrepreneurs who had to become more efficient or find themselves unable to cover the interest payments on the bonds Milken and others had placed for them.

Such efficiency-enhancing hostile mergers still occur, but we are now in "A Slightly Kinder and Gentler Era for Hostile Takeovers," to borrow from a November 1999 *New York Times* headline. A mere 100 bids totaling $364 billion were in the "unsolicited" category last year, according to Thompson Financial Securities Data. With share prices at record levels, companies can use their stock as "currency" for deals of almost any size. And if the target company balks, it seems that some accommodation can be worked out these days.

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Perhaps the accommodation is the establishment of "co-CEOs," an invitation to infighting and to the eventual demise of one of these co-equal managers (think Travelers and Citigroup), often after a period of paralysis in which underlings expend their energies deciding which way to jump rather than figuring out how to enhance shareholder value. Not at all like the 1980's, when the deposed managers were not welcome in the executive suites of their former companies, and anyhow were unlikely to be willing to associate with what one of those corporate aristocrats termed "Diet-Coke-guzzling, cigar-smoking arrivistes."

There are other reasons why the shares of acquirers often sell down when a deal is announced, and why the owners of the acquired firm are delighted to take their premiums and run. Cultures clash. (Think Chrysler and Daimler.) Back-office computer systems collide rather than mesh. Foreign acquisitions prove to be a prelude to unexpected events: Brazil was the largest recipient of cross-border merger investment in the second half of 1998, according to investment bankers Robert Fleming. And the buyers of these Brazilian bargains apparently didn't factor in the risk that Brazil would have to let its overvalued currency sink to realistic levels.

Suffice it to say that two out of every three deals fail to create value. Only the selling shareholders walk away winners. Well, not quite: the acquiring CEOs know that bigger is indeed better – at least for them.

Of course, not all mergers are the result of base motives or prior mismanagement. And not all lead to cumbersome management structures. Some are responses to changes in economic circumstances so fundamental as to make the status quo untenable. The market for telecommunications services, for example, has become global in scope as deregula-

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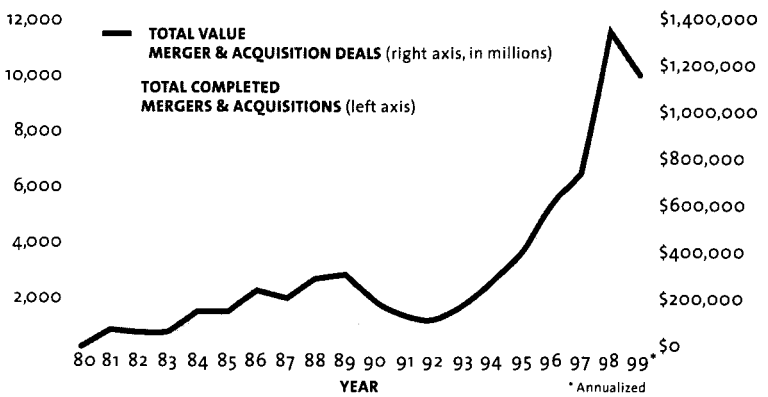
tion and new technologies drive costs relentlessly down and the demand for more, better and newer services drives demand relentlessly up. Users of telecommunications services now operate around the globe and around the clock – and many want to deal with companies with the scale and scope to match.

HEADING FOR HIGHER AND HIGHER PLATITUDES



But whether mergers result from management greed, a mistaken reading of the economic tea leaves, or an accurate appraisal of the restructuring required by technology and changing regulations, one thing seems clear: most mergers create little threat to competition. For one thing, if the much-abused term "globalization" means anything, it is that most companies face vigorous competition from overseas rivals. No sensible trustbuster worries that the merger of Chrysler and Daimler-Benz has created a company capable of extracting monopoly profits from American consumers. If it tries to behave as if it possesses market power, the Daimler-Chrysler combo will find its customers wooed away, not only by domestic competitors such as General Motors and Ford, but also by foreign automakers such as Toyota, BMW and Volvo.

John Shenefield, former head of the Justice Department's antitrust division and now a senior partner in the law firm of Morgan, Lewis & Bockius, adds that the current relatively relaxed official attitude toward mergers is due to a realization that globalization and rapid advances in technology generally make it easier for newcomers to challenge incumbents. So the authorities worry less about concentration resulting from a merger, as long as there are no artificial barriers to the entry of new competitors.

But that does not mean the trustbusters are, or should be, passive. There are instances in which a merger can create concentration levels so high as to threaten competition, in which case selective disposals are demanded prior to the merger. And there are others where artificial barriers to entry – a limited number of takeoff and landing slots at an airport, to cite one classic example – warrant a challenge to mergers from the antitrust enforcers. But these are more the exception than the rule these days.

All this means that most mergers will, in the end, be tested in the market. Most of the conglomerates assembled in the 1960's have come unglued as they proved unable to compete with more focused companies. So, too, may many of the deals concocted in the 1990's, if size proves an impediment to the agility now needed to keep pace with accelerating change. And the discipline is likely to be swift and sure, if the trends toward more aggressive supervision by corporate boards and greater activism by institutional investors continue.

Not a bad policing mechanism, the free market.

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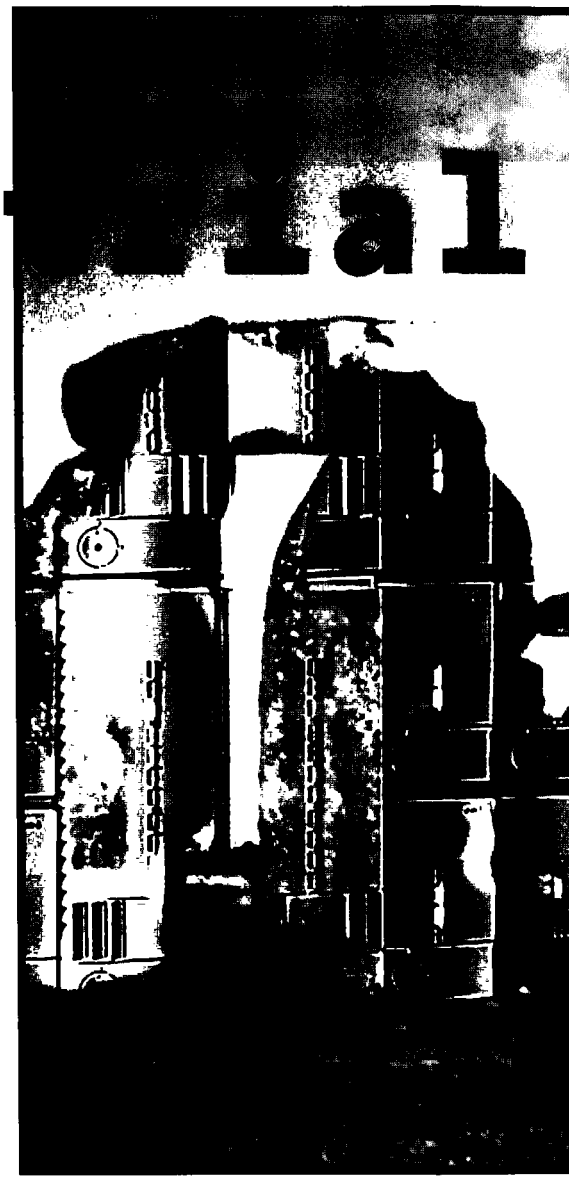
The Next Industrial



Information Technology makes a difference – finally.

By Stephen S. Cohen, J. Bradford DeLong and John Zysman

Is the recent acceleration of American economic growth likely to persist? Could the next generation see its material standard of living rise at something like 3 percent per year, rather than the 1 percent or so we have grown used to since the slowdown of the early 1970's? And will the next generation see other countries join the world economy's wealthy core not one by one – as Italy joined in the 1960's, Japan in the 1970's, and Korea hopes to join in the next decade – but in battalions?

Yes, Virginia, there is a New Economy

Maybe. The next generation might see a return of productivity growth to the levels present before 1973, but that is not inevitable. What happens will largely turn on the answers to two questions: are the changes profound – and if they are, will we provide the proper resources and rules to nurture them?

Many see a shift in the economic landscape, and different people call it by different names: the post-industrial society, the innovation economy, the knowledge economy, the network economy. We prefer a new term: the e-conomy. The other

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Revolution?

labels seem vulnerable to misinterpretation and focus attention in the wrong direction. The term "network economy" is too narrow. "New economy" is too broad; it can carry anything anybody wants to put into it. The term "e-conomy" centers on the idea that today's shift is driven by the development and diffusion of information technology. The e-conomy is a structural shift, bringing transformation and disruption. But it is not about soft macroeconomic landings, smooth growth, permanently rising stock prices, government budget surpluses, or permanently low rates of unemployment, interest and inflation.

What, then, is the e-conomy about? There are eras when advancing technology and changing organizations transform not just one production sector but the whole economy and the society on which it rests. Such

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moments are rare. But we may well living in the middle of one driven by information technology.

THE TECHNOLOGICAL TSUNAMI: MOORE'S LAW

Back in 1965, Gordon Moore, the founder of the Intel Corporation, projected that the density of transistors – electronic switches – on a silicon chip would double every 12 months. He was somewhat overoptimistic: transistor density has been doubling every 18 months. But his forecast of the pace of technological improvement, immortalized as Moore's Law, was largely correct. The astounding growth of productivity in the design and manufacture of integrated circuits underpins modern computing and communications.

Information processing power grows along with transistor density. Today's computers deliver 66,000 times more power per dollar spent than the computers of 1975 did. And the best guess now is that Moore's Law has another ten years to run along its present technological trajectory before reaching limits dictated by physics or cost. Hence computers in 2010 are likely to have ten million times the processing power of circa-1975 computers.

How does the information-processing revolution compare to previous waves of innovation? Contrast the past 40 years of progress in information technology with another technical leap, the replacement of the steam engine with the electric motor. In 1869, America's steam engines produced 1.2 million horsepower for manufacturing. By 1939, electric motors were delivering 45 million horsepower. This was roughly a fortyfold increase in 70 years – a 5 percent annual increase in mechanical muscle.

At the end of the 1950's, there were roughly 2,000 computers up and running in the world – machines like Remington Rand Univacs, IBM 650's and 702's, and DEC PDP-1's, with processing power averaging perhaps 10,000 instructions per second. Forty years later, there are approximately 200 million computers in use worldwide, with processing power that averages approximately 100 million instructions per second. That is a millionfold increase in 40 years – a 35 percent per year increase in information-processing power. Meanwhile, labor productivity growth in all non-farm businesses was not especially impressive in the 1990's, increasing only 1.6 percent annually.

But the price of computing power has fallen by 99.99 percent in a single generation, and the price of semiconductors has fallen even faster. By no coincidence, the productivity performance of the industries that produce information technology goods – semiconductors, fiber optics, and so forth – has been astonishing. In this one sector, labor productivity has been rising at nearly 25 percent per year.

THE TECHNOLOGICAL TSUNAMI: THE NETWORK

Back in the early days of networking – the 1960's and 1970's – it was thought that high-speed data communications would require special data-friendly phone lines. POTS – plain old telephone service – would be capable of carrying data transmissions at 300 bits per second or, if we were lucky, a turbocharged 2,400 bits per second. Hardly any-

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one dreamed of the 40,000-plus bits per second typically achieved by the latest generation of computer modems.

The wave of innovation in data communications has allowed the rapid creation of the worldwide data network on top of the existing phone network. To put it another way, technology made it possible to leapfrog the decades that would normally have been needed to wear out the hundreds of billions of dollars' worth of telephone lines in place – the time it would otherwise have taken to rewire the United States for the Internet. Today the United States houses one computer connected to the Internet for every 15 citizens. And more than 60 million computers are now linked to the Net worldwide.

The best is yet to come. At least half the phone lines in the country are capable of handling high-speed DSL service, permitting perhaps another fiftyfold increase in data transmission capacity. Approximately three-quarters of the households that are not close enough to telephone switching offices to get DSL service are potential customers for cable modems – high-speed links using existing cable television wiring.

Whether the first generation of high-bandwidth connections will be cable modem, DSL, or wireless connections will be decided by a market heavily influenced by regulation. But the connections will arrive quickly. And still higher-bandwidth connections are on the horizon. Kim Maxwell, the author of *Residential Broadband: The Battle for the Last Mile*, forecasts video-on-demand beginning in 2003 and fiber-optic cable to the home starting around 2015.

ARCHIVE PHOTOS

Internet Service Provider? What's that?

JUST A LEADING SECTOR?

Nothing that we have said so far is the story of an e-conomy. Indeed, it looks more like the standard story of a leading sector – explosive innovation in a corner of the economy that revolutionizes productivity in a narrow range of goods and services. There have been many such leading sectors in the past – air transport in the 1960's, television in the 1950's, automobiles in the 1920's, organic chemicals in the 1890's, railroads in the 1870's. They did not change the standard dynamic of economic growth: they were the standard dynamic of growth. So what, if anything, is different this time?

TOOLS AND GADGETS

One way to think about that question is to draw a distinction between "gadgets" that

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make life easier or industry more productive but that can be slotted into the existing industrial organization, and more profound shifts we call "tools." The automatic transmission, for example, is a gadget: it allows you to tune the radio or to talk on the phone while driving, even if you are a klutz with a gearshift and clutch. But a car with an automatic transmission still does what a car does.

By contrast, the electric motor is a tool. Among other things, it made the modern assembly line possible. Factory floors no longer had to be arranged to allow each machine to be connected to the network of belts and shafts that transferred energy from a central steam engine. Paul David, an economic historian at Stanford, notes that it took 40 years for industry to figure out how to reorganize itself to take advantage of the decentralizing potential of electric motors. We call that reconfigured system mass production. And the long-run consequences – industrial, organizational, social – were enormous.

So are the revolutionary improvements in computer and communications technology gadgets? Do they merely allow us to add prettier graphs to reports and learn about the weather without waiting until 25 minutes past the hour? Or are they tools that fundamentally change industrial organization?

We think there is a chance – a very good chance – that 100 years from now, people will look back at the current wave of innovation and conclude the latter. The tools of the Industrial Revolution amplified muscle power: you didn't have to rely on a human or a horse anymore. The tools being forged today amplify the power to acquire and analyze information: you no longer have to rely on human memory or human eyes to manage the task.

Thus, it could be a very big tool, indeed. But even if it is a monster, there is no guarantee that we will do a good job of nurturing the industrial, organizational, and social transformations needed to take full advantage of its potential.

AN ANALOGY: THE GILDED AGE

Consider the coming of the large corporations to late-19th-century America. It needed more than the improvements in production technology to make large-scale industrial organization possible. Indeed, with hindsight, it apparently required five things:

- Limited legal liability for corporations.
- Liquid markets for trading of fractional ownership shares.
- Investment bankers to serve as intermediaries for capital markets.
- The federalization of regulation to insure free interstate commerce.
- An antitrust policy with some teeth.

The legal and institutional changes – limited liability, liquid markets and investment banking – made it possible to assemble the capital to build factories on the scale to serve a continental market. Political changes – antitrust policy – insured that the enormous economies within the grasp of the large corporation were not achieved at the price of replacing competition with monopoly. And centralization of the regulation of commerce allowed the new corporations to serve all the states.

Think of Swift and Armour. Their businesses were based on the idea of slaughtering beef in Chicago, shipping it dressed to, say, Boston, and undercutting the prices charged by small-scale local slaughterhouses by a third. This was a very good business plan. It promised large profits for investors and a better deal for carnivores.

But what if the Massachusetts Legislature had required that all meat sold in Massa-

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When trustbusting was fun.

THOMAS NAST/ARCHIVE PHOTOS

chusetts be inspected on the hoof in the state? Swift's and Armour's businesses could not have existed. Without the right system of governance – in this case, the federal pre-emption of health and safety regulations affecting interstate commerce – you would never have seen the rise of America's efficient mass production of meat.

By contrast, Europe was Balkanized by national tariffs: without a continent-spanning market, fewer economies of scale were attainable. In Britain, with next to no development of investment banking prior to World War I, you didn't get assembly of the pools of capital needed to build large factories. British businesses stayed smaller – and much less efficient – than their American counterparts.

In Germany, with no antitrust policy worthy of the name, there was no brake on the cartelization of modern industry. Theories that German industrial cartels poisoned Germany's politics in the first half of the 20th century are now out of favor. But there's no denying that cartel-driven restrictions on output and innovation made Germany a poorer place in economic terms.

Because institutions in the United States changed to support, nurture and manage the coming of mass production and the large-scale business enterprise – and because European institutions did not – America led the world at the start of the 20th century. The United States was, in the words of Leon Trotsky, "the furnace where the future was being forged."

FUMBLING THE FUTURE?

What could truncate the possibilities opened up by new technology? It is possible that the potential productivity change from data-processing and communications technology just isn't as great as we have supposed. Perhaps the most important invention for the distribution of information will turn out to have been television rather than the Internet. Perhaps the most important invention for corporate organization will turn out to have been the filing cabinet. However, we're believers: the evidence is mounting that the information era is all that it's cracked up to be.

Second, we might fail to support the new technologies with the proper "social infrastructure." Consider, again, 19th-century Britain. But this time, compare it to Germany rather than to the United States. Manchester, the heartland of British manufacturing in 1850, showed both the potential and the dangers of the Industrial Revolution. The potential, of course, was the enormous increase in productivity and output. The dangers were found in the slums – for the British govern-

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ment was not then investing in the infrastructure needed to keep its rapidly expanding urban population healthy, let alone to provide education for its children.

Few in Manchester noticed that the British government was not building schools for children of workers migrating from the countryside to the jobs in the new factories. Yet it should have been clear even then that industrial technology was becoming increasingly sophisticated and dependent on skilled labor. By the end of the 19th century, the lack of a well-schooled workforce meant that the post-steam-engine technologies of electricity, metallurgy, and chemistry found more fertile ground in Germany. Thus Britain entered the 20th century and its death struggle with German authoritarianism having squandered an initial edge in technology.

RESOURCES

Just as the second industrial revolution displacing steam power required a mechanically literate workforce, so the American economy of the early 21st century will require a computer- and communications-literate workforce. It will need inventors and innovators to push out the envelope of the possible in the use of these technologies. It will need engineers and technicians to staff the industries – and to manage the interfaces between information technology and the rest of the economy. It will need a public with sufficient knowledge to use the great network and its computers productively.

Our educational system does not seem up to the task. One consequence of increasing income inequality in America in the past quarter-century has been a decline in effective political support for public services that are paid for by the rich and used by all. By the same token, we seem indifferent to the possibilities of recruiting talent abroad. As Berkeley faculty members, we look at our students who come from outside the United States and think that America's immigration policy is shortsighted. Your average Berkeley grad is going to be a valuable asset to whatever society he or she lives in, yet America's politicians do not seem to be fighting hard to keep such people.

There are other resource-related questions as well. What is going to keep money flowing to research and development after stock market values return to earth? Who is going to provide the basic research to keep the pipeline of new technologies filled? In the generation and a half after World War II, the Federal government – along with a handful of private institutions like Bell Labs and Xerox PARC – did amazing things to support research and development. But in recent decades that commitment has eroded. What will fill the gap?

RULES

Last but hardly least is the matter of rules – the private and public governance to keep innovation coming. Silicon Valley has turned out to be an enormously fertile industrial ecology for nurturing this techno-economic revolution. How can we make it work better? What must we guard against that could make it work not very well?

The e-conomy is plainly a work in progress, and the rules will have to change along with the game. But creating new rules for a new era will require real choices and decisions, not just casual tinkering. The new circumstances, often involving qualitative changes in business and social life, will force painful changes in the social contract. But anyone who believes that we are on the threshold of an extended period of productivity growth should remember that institutions could make or break the golden age. M

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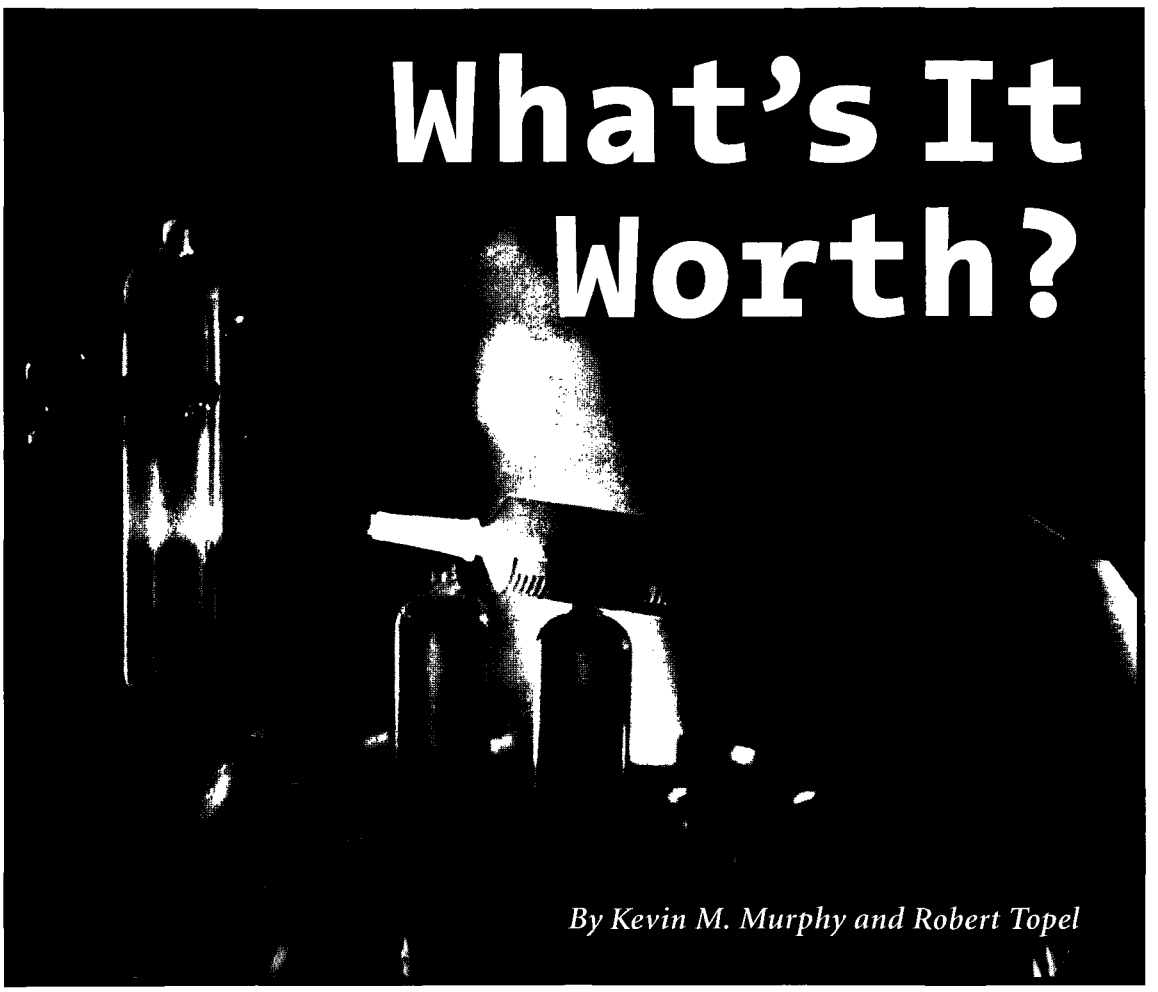
Medical Research

What's It Worth?



TED HOROWITZ/STOCKMARKET

By Kevin M. Murphy and Robert Topel

In 1995, the United States invested $35 billion in medical research – a very big number by almost any benchmark. Of this, $13 billion came from the Federal government, which was half again more than a decade earlier and which represented about one-fifth of total Federal outlays on research and development in 1995.

Per person, total annual spending on health care more than doubled between 1980 and 1995, to $2,771. Health-care outlays, which represented 10 percent of personal consumption in 1980, ballooned to 16 percent by the early 1990's, triggering alarms from corporate boardrooms all the way to the Oval Office.

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MEDICAL RESEARCH

The nation's medical bill, we were frequently informed, was excessive. Yet there was little in the way of rigorous argument to buttress the claim – nor can there be without an estimate of the benefits from improved health and longevity associated with the investment.

Bolstered with a suitable economic framework, we have calculated the economic value of the changes in life expectancy observed over the past several decades. And the results are sure to surprise even the most jaded bean counters.

We estimate that improvements in life expectancy alone (i.e., ignoring the benefits of improved quality of life associated with decreased morbidity) added about $2.8 trillion per year (in 1992 dollars) to national wealth between 1970 and 1990. For purposes of comparison, note that America's gross domestic product in 1980 – the midpoint of the period – was about $4.6 trillion in 1992 dollars.

While some of the improvement in life expectancy was no doubt the result of factors other than better health care, the gains are so large it is hard to believe that the return to health intervention was not enormous. This intuition is bolstered by our finding that about $1.5 trillion of the overall $2.8 trillion annual increase was due to the reduction in mortality from heart disease – an area in which medical advances in both prevention and acute care have been significant.

By the same token, our analysis implies that the potential gain from additional improvements in health care is gigantic. We estimate that eliminating deaths from heart disease would generate about $48 trillion in economic value; from cancer, $47 trillion. While such dramatic improvements in health are not on the immediate horizon, our calculations suggest that the more imaginable result of reducing the death rate from either of these diseases by 20 percent would be worth about $10 trillion – more than one year's national income.

Wait – this story gets even better. A fairly simple (and plausible) model of how better health translates into personal well-being suggests that the returns to improvements in health escalate as the population gets larger, income increases, the average health of the population improves and the population gets closer to the predictable age of the onset of disease. Indeed, we estimate that the growth and aging of the population will by themselves raise the economic return to improvements in the treatment of many diseases by almost 50 percent between 1990 and 2030. Meanwhile, likely increases in real incomes and life expectancy will add at least that much again to the gains.

Our analysis casts new light on some of the key economic issues linked to the value of health research, as well as to the growth in health expenditures. We show, for example, that improvements in health are complementary – that improvements in life expectancy from any source increase the economic reward to further improvements by raising the remaining value of life.

This means that advances against one set of pathologies, for instance, heart disease,

DAVID MCGLYNN/FPG INTERNATIONAL

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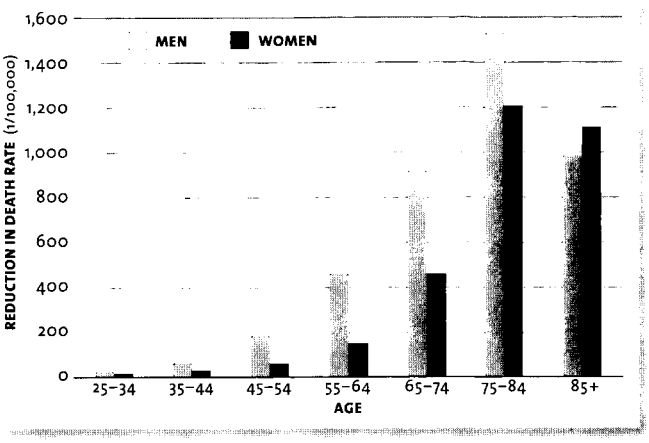
raise the economic reward to progress on other diseases, such as cancer. This implies that well-documented successes in treating heart disease, where mortality has fallen by roughly 30 percent since 1970, have increased the potential returns to research on cancer and other diseases.

FIGURE 1: REDUCTION IN THE DEATH RATE FROM HEART DISEASE, 1970-1990



VALUING HEALTH GAINS

Improvements in health affect both the quality of life and the risks of mortality. As economists, we know of no other way to value these benefits than to ask how much people would be willing to pay for these improvements. Rather than attempt such a calculation ourselves, we relied on the voluminous body of economic and psychological research on how people trade off income and risk.

Briefly, the value of life is derived from statistical estimates of the extra wages workers demand in order to bear a small increase in the chance of dying on the job. Let's say moving from a factory job to construction increases the chance of dying by one in 10,000 each year. In other words, in a population of 10,000 workers, this change in risk would raise expected deaths by one per year. Suppose further that workers are paid an extra $500 in annual wages as compensation for bearing the extra risk. To induce workers to play this virtual death lottery, an employer would have to pay an extra $500 in annual wages for each of the 10,000 workers, or $5 million. Thus the value of one statistical life in this example is $5 million.

This example is in the same ballpark as the actual numbers that researchers have found from a variety of indirect estimates – such as measuring how much people will pay to reduce the probability of death by installing smoke alarms in their houses. Kip Viscusi of Harvard University, the uncrowned king of value-of-life calculations, puts the "reasonable range" for the value of life at $3 million to $7 million.

ACTUAL AND POTENTIAL HEALTH IMPROVEMENTS

We do not present our mathematical model here. Suffice it to say that standard (and plausible) economic assumptions yield important implications for valuing improvements in life expectancy. To illustrate, we first apply the model to changes in mortality due to heart disease between 1970 and 1990.

Figure 1 shows the reduction in the death rate from heart disease by age category, as measured by the change in annual deaths per 100,000 individuals. The reduction is concentrated at ages 55+ for men and 65+ for women.

Figure 2 uses our framework to calculate the change in the value of life caused by these reductions in mortality. The value of the decline in heart disease peaks for men at about age 50 and for women at age 65 – in both cases, just prior to the age at which major reductions in deaths have been achieved.

The peak at older ages for both sexes

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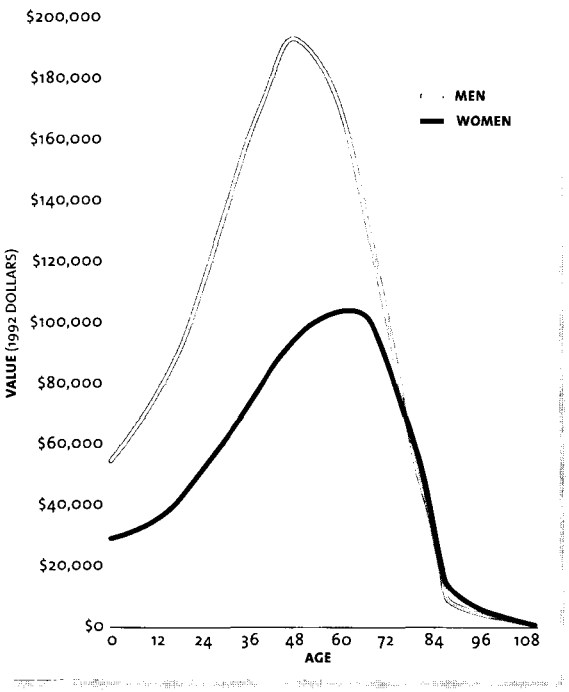
reflects the fact that heart disease deaths are concentrated at older ages. The difference in timing between men and women reflects the fact that deaths from heart disease typically occurred at somewhat younger ages for men

FIGURE 2: ECONOMIC VALUE OF REDUCTIONS IN HEART DISEASE DEATHS, 1970-1990



than for women. In our model – and as a matter of common sense – progress against heart disease in men is worth more simply because of the greater reduction in death rates from heart disease among men.

At very old ages the expected length of life is so low that marginal increases from dodging the bullet have relatively low value. Compare Figures 1 and 2: the greatest reduction in death rates occurs in the two oldest age groups while the greatest increase in value of life occurs at younger ages.

This result also implies that improvements in life expectancy are complementary – progress against one disease raises life expectancy and therefore increases the value of further improvements in survival rates. For example, the reduction in death rates from heart disease shown in Figure 1 has increased the return to reducing death rates from cancer and other diseases common in old age.

With a parallel calculation, we can estimate the economic value of the increase in life expectancy that occurred between 1970 and 1990, regardless of the source. To make these computations, we used published data on death rates from all causes by age for 1970, 1980 and 1990, discounting the value of future years the same way economists discount the value of future consumption.

We first compared the value of life by age for the 1980 population using 1980 survival rates with what the value of life would have been for this population had survival rates remained at their 1970 values. This difference represents the value, as of 1980, of the cumulative improvements in life expectancy that occurred between 1970 and 1980. The results, shown in Figure 3, make it clear that the gains to individuals were very large.

Improvements in life expectancy had a peak value of about $170,000 for men from the ages of 40 to 55 and about $120,000 for women around age 40. The larger increase in the value of life at birth for both sexes reflects the value of the reduction in infant mortality.

Figure 3 also shows the corresponding increases in values from 1980 to 1990. We do this in an analogous way, comparing the value of life by age for the 1990 population using 1990 survival rates with what the value of life would have been had survival rates remained at their 1980 values. While the gains from 1980 to 1990 are smaller than those from 1970 to 1980, they are still enormous – on the order of $130,000 for 50-year-old men and

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$60,000 for 50-year-old women.

Table 1 accumulates the values across individuals of various ages and both genders to estimate the value of these increases in life expectancy. These values are truly enormous: more than $36 trillion for the change from 1970 to 1980 and $21 trillion from 1980 to 1990. The average annual change from 1970 to 1990, shown in the final column, amounts to about $2.8 trillion. This figure for the economic value of the annual improvement in life expectancy is more than half of the gross domestic product in 1980 and nearly equal to total consumption ($3 trillion) in that year. In other words, adding the increased value of life generated by advances in health to conventional measures of national output would increase real output over this period by a staggering 60 percent.

Improvements in health come from many sources, of course, not just medical knowledge. They include improvements in public health measures, changes in lifestyle (that may or may not be informed by medical research) and increased access to health care. So the $2.8 trillion figure exceeds the net gains from improved medical care. By the same token, medical knowledge is just one source of better medical care. To isolate the net social benefit from technological progress in fighting mortality, one would have to subtract both the cost of the research itself and the added outlays for treatment needed to utilize the new technology.

As Table 2 shows, the growth in expenditures that led to increased longevity have been small relative to the increases in the value of life (on the order of 15 percent). Correcting for the increase in health expenditures reduces the net added value from $37 trillion in 1970 to $34 trillion in 1980, and from $21 trillion in 1980 to $16 trillion in 1990. It reduces the average annual increase from $2.8 trillion to $2.4 trillion.

These results imply that life expectancy has increased far above and beyond what would be expected based on the growth in health-care expenditures alone. Thus, in economic terms, the health-production sector must have experienced rapid rates of technological improvement. It remains to be proved that this technical progress is linked to medical research, as opposed to, say, changes in environmental quality. But if even a small fraction of this improvement is due to medical research, the economic return to that

FIGURE 3: INCREASES IN THE VALUE OF LIFE, 1970-1980 and 1980-1990

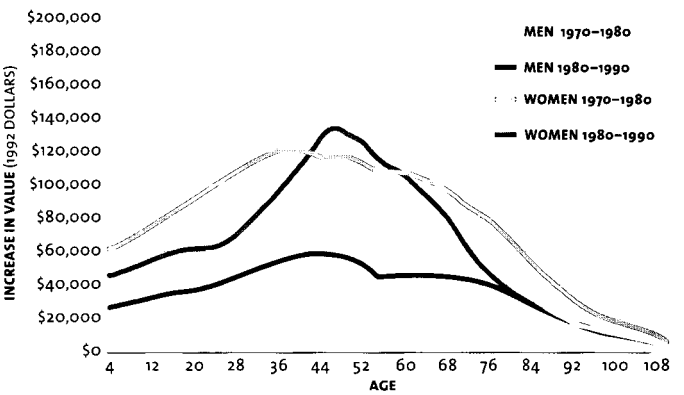

TABLE 1: THE ECONOMIC VALUES OF INCREASES IN LIFE EXPECTANCY

TOTAL VALUES (IN MILLIONS)

	1970–1980	1980–1990	1970–1990
Men	$20,547,654	$13,333,130	$1,619,017
Women	$16,042,877	$7,966,696	$1,158,343
TOTAL	**$36,590,530**	**$21,299,826**	**$2,777,360**

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research must be substantial.

Indeed, the values in Table 2 seem unbelievably large. Yet these estimates are a direct result of three plausible assumptions:

1. The $5 million value of life drawn from economic research on individuals' willingness to bear risk in return for money.
2. The magnitude of the reduction in death rates over the 1970-1990 period.
3. The sheer size of the United States population, to which increases in the stock of knowledge can be applied.

TABLE 2: THE NET ECONOMIC VALUES OF INCREASES IN LIFE EXPECTANCY

TOTAL VALUES (IN MILLIONS)

	1970–1980	1980–1990	1970–1990
Men	$19,441,601	$11,040,528	$1,461,346
Women	$14,781,280	$5,426,623	$ 980,800
TOTAL	**$34,222,882**	**$16,467,151**	**$2,442,146**

The value-of-life estimate implies that changes in health that increase life expectancy by one discounted life-year generate an increase in the value of life of $150,000 to $200,000. With a population of 280 million, this implies a gain of $42 trillion to $56 trillion.

The same sort of calculation allows us to look forward to estimate the value of reducing mortality. Table 3 lists the gains to men, women and the population as a whole that would result from eliminating deaths from various diseases. The numbers reflect the 1995 distribution of individuals across ages and genders. And they correspond to eliminating deaths from specific diseases, holding death rates from others constant.

The $47 trillion and $48 trillion numbers for cancer and heart disease are staggering. They imply that an innovation reducing the death rate from cancer by a mere 1 percent would be worth almost $500 billion. Reducing death rates from a single category of cancer, such as breast or digestive tract cancer, by 10 percent would have a similar value. Reducing the death rate from AIDS by 10 percent would be worth about $750 billion.

By contrast, total Federal support for health-related research in 1995 was about $13 billion, or about one-fortieth of the gain from a 1 percent reduction in the death rate from cancer. The benefits would presumably be offset in part by increases in the cost of applying new technologies. However, if history offers any insight, the potential gains would swamp the costs. Recall, for example, that the increase in medical expenditures from 1970 to 1990 was only about one-eighth of the total increase in the value of life.

INVESTMENTS IN MEDICAL RESEARCH

Table 4 offers estimates of the investments in both medical research and aggregate research and development (R&D) for the nation in 1995, as well as the growth in R&D over the preceding decade. As the table makes clear, the investment in medical R&D is substantial. Moreover, the level of funding for health research grew 80 percent in real terms between 1986 and 1995.

This growth essentially kept pace with the 65 percent growth in health-care spending over the same period, and significantly outpaced the 23 percent growth in GDP. The growth in medical research also outpaced the growth in total R&D (80 percent versus 14 percent). These figures are even more striking when the 46 percent increase in real Federal spending on health care R&D is compared with the 13 percent decline in total Federally funded R&D.

Is spending on health-related R&D too high or too low? While a precise answer can't be inferred from our analysis, it can add per-

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spective on the issue. First, the amount spent on medical research is minute compared with the growth in the value of life. In fact, if we take the net $2.4 trillion increase in the value of life per year for the 1970-1990 period as a starting point, and assume that only 10 percent of this increase is due to increases in medical knowledge, we are left with a return of a still-awesome $240 billion annually.

The estimates for the value of progress against specific diseases in Table 3 tell a similar story. Reducing the death rate from heart disease or cancer by a mere one-tenth of 1 percent would be worth $50 billion – half again more than annual expenditures on health research.

Table 5, listing R&D expenditures as a percentage of net sales, also provides some perspective on the current level of funding for health-related research. The 10.4 percent figure for the drug industry is the highest of any industry. However, the 3.2 percent share for the health-care sector as a whole ranks significantly below the 8 percent shares for office and computing equipment, communications equipment, electronic components and scientific instruments. Indeed, the R&D share for medical care is closer to the R&D share for motor vehicles than to shares in high-technology sectors.

One possible reason for the relatively low ratio of R&D to sales for health care (and the high dependence on government-supported research) is that private enterprise may be unable to capture much of the gain on investments. For service industries such as medical

TABLE 3: THE ECONOMIC VALUES OF REDUCING DEATHS FROM SELECTED CATEGORIES OF DISEASE

	INCREASE IN VALUE OF LIFE (IN MILLIONS)		
DISEASE CATEGORY	**MEN**	**WOMEN**	**TOTAL**
Cancer	$24,325,209	$22,211,974	$46,537,183
Breast	$25,080	$4,617,170	$4,642,251
Digestive Organs	$5,469,042	$4,160,405	$9,629,447
Genital and Urinary	$1,810,372	$2,334,439	$4,144,811
Heart	$28,636,005	$19,711,577	$48,347,582
Stroke	$3,472,990	$4,156,135	$7,629,125
Circulatory Disease	$3,085,051	$2,654,387	$5,739,438
Flu	$1,841,048	$1,591,013	$3,432,061
AIDS	$6,277,524	$1,262,572	$7,540,097

TABLE 4: EXPENDITURES ON R&D – BIOMEDICAL AND AGGREGATE BY FUNDING SOURCE FOR 1995

BIOMEDICAL R&D FUNDING	**EXPENDITURE** (IN MILLIONS)	**% OF TOTAL**	**% GROWTH 1985-1995**
Federal Government	$11,407	45.3%	53.8%
Industry–Drug Industry	$10,202	40.5%	108.9% *
Academic Research–Non-Gov. Funding	$3,593	14.3%	——
TOTAL	**$25,202**	**100.0%**	**75.7%****
Spending on Health Care	$784,200		78.0%
Health R&D as % of Health Expenditures	3.2%		-1.3%
Health R&D as % of GDP	0.3%		38.6%
Health R&D as % of Total R & D	13.8%		50.3%**
AGGREGATE R&D FUNDING			
Federal	$63,147	34.5%	-12.1%
Industry	$110,998	60.7%	220.1%
Other	$8,868	4.8%	68.8%
TOTAL R&D FUNDING	**$183,013**	**100.0%**	**16.9%**
GDP	$7,253,800		26.7%
TOTAL R&D AS % OF GDP	**2.5%**		**-7.8%**

* Based on data for 1986
** Based on data for federal and drug industry only

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care, advances often come in the form of procedures that cannot be patented, and so the rewards do not accrue to the investors.

Embodying ideas in physical goods creates an indirect way for innovators to collect on their investments in knowledge. Not surprisingly, the R&D-to-sales ratio is three times higher for drugs – which can be patented – than for health care as a whole. The reliance on Federal funding also mirrors this idea: funding for drug research is almost entirely private, while funding in other areas of medical research depends largely on Washington.

TABLE 5: R&D AS A PERCENTAGE OF SALES, SELECTED INDUSTRIES

Drugs & Medicines	10.4%
Office & Computing Equipment	8.1%
Communications Equipment	8.0%
Electronic Components	8.0%
Optical, Surgical & Photographic Equipment	8.0%
Scientific Instruments	6.6%
Industrial Chemicals	4.7%
Motor Vehicles	3.0%
Non-electrical Machinery	2.4%

The divergence between the "social" return and the private return to investment in medical knowledge is common in R&D. We believe the resulting distortions to private incentives are important to understanding how research is funded today – and why one generally expects it to be underfunded.

Medical care is also subject to other important distortions in incentives. The first and most widely recognized of these is the prevalence of "third party" payers. Insured individuals make most of the decisions about medical spending, though they bear only a small portion of the consequent economic costs. While the growth in managed care has altered this a bit, it seems clear that third-party payment distortions are here to stay. Overall medical spending will surely be higher than it would be in a system in which patients bear the costs of their decisions.

Since the insured tend to overspend, the induced increase in health-care outlays could offset gains from medical knowledge. If, for example, every cancer patient buys an expensive new treatment that has only modest effects, the costs could outweigh the benefits. So to be conservative, we calculated the increased value of improved health net of the increase in medical spending. This eliminates the need to separate the contributions to health of increases in medical knowledge and the associated increases in medical spending.

The effect of third-party payers also skews the pattern of research. Ideally, the search for medical advances would be driven by the potential net gains: the value of increased health and life expectancy, less the true costs of the treatment needed to implement these advances. But with third-party funding, the weight placed on the economic costs of treatments is reduced, skewing innovations toward those that are cost-increasing.

This tendency is aggravated by the reality that cost-increasing innovations often involve new equipment or drugs, which allow the innovators to collect some of the value produced. Those who provide the funds for research should be aware of these distorted incentives, and perhaps lean toward projects that promise cost-reducing innovations.

But it's critical not to lose sight of the main chance. Our analysis suggests that, even after taking account of distorted incentives, the potential gains to medical advancement are enormous. Even the prospect of very limited progress against killer diseases would easily justify current expenditures and most likely expenditures far above current levels.

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International Financial Reform

The Morning After

By Albert Fishlow

Muddling through is less painful than clean-slate change

Y2K arrived, and forecasts of apocalypse when the computers decided that William McKinley was still living in the White House proved overwrought. Much the same could be said about global financial reform. For despite a stream of jeremiads in the wake of five years of crises – think Mexico, Thailand, Indonesia, Korea, Malaysia, Russia, Brazil, Ecuador – the powers that be have not been moved to rewrite the rules of international finance. And they aren't about to anytime soon.

SANDRA BAKER/TONY STONE

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It's not hard to see why: despite the occasional whiff of chaos, the global economy is in remarkably good shape. The United States prospered through most of the 1990's, allowing it to serve as the world's engine of growth when it was needed most. Happily, as higher interest rates begin to take the edge off the rate of growth in the United States economy, other countries seem ready to pick up the slack.

Europe has converted to a single currency and, thanks in part to the unexpected erosion of the euro's exchange value, seems destined to continue its expansion in the next few years. Japan, after almost a decade of stagnation, is finally showing signs of recuperation. And not least, virtually all of the victims of the 1990's financial crises are on the mend.

In contrast to the crunch of the 1980's, which took Latin America more than a decade to shake off, these crises have proved short-lived. Moreover, each has set in motion political as well as economic forces that promise to reduce national economies' vulnerability to financial shocks. Indeed, these changes, in the wake of the dramatic fall of the Soviet bloc in 1989, have decisively altered the rules of the game. Some may still speak of a third way, but capitalism reigns.

A good measure of capitalism's triumph is the expansion of world trade. Trade has continued to grow at twice the rate of output. And despite the recent meeting of the World Trade Organization in Seattle, where labor unions and environmentalists aspired to build a popular front in opposition to globalism, further reductions of trade restrictions are very likely. That conclusion follows from a simple reality: the only remaining superpower is a major beneficiary of trade expansion, and not merely through rapidly expanding exports. United States investment would be lower were it not for the fact of our large, continuing dependence upon foreign savings that is the flip side of our import surplus.

Lenders not only will know less than borrowers, but will be competing for the opportunity to take advantage of the ignorance of other lenders.

Lawrence H. Summers, the Secretary of the Treasury, did turn up the heat on financial reform at the meeting of the G-20 in Berlin, but nothing can really happen until the International Monetary Fund appoints a new director to replace Michel Camdessus. And Summers' apparent enthusiasm for tinkering may have been purely tactical – an effort to steal the thunder of a forthcoming report from a Congressional commission headed by Allan Meltzer that will offer a Republican twist on events and policy.

WHAT YOU SHOULD KNOW AND WHEN YOU SHOULD KNOW IT

Are we missing an opportunity to change global capital markets for the better? Are we, in effect, fiddling while Bangkok, Sao Paulo and Moscow smolder? Read on.

In the wake of the Asian meltdown, the importance of delivering more reliable and up-to-date information to the public has

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P. CROWTHER, S. CARTER/TONY STONE

become a bromide of the financial lecture circuit. Indeed, resistance to collecting and sharing data is even waning at the secretive IMF. Many of the heretofore-well-guarded IMF country agreements are now promptly posted on the Internet. Meanwhile, national ministries of finance are getting in the habit of publishing fiscal and balance-of-payments data on a timely basis. That represents an about-face since 1994, when the size of Mexico's foreign-exchange reserves was a state secret. Thailand's born-again transparency is equally radical: this, after all, was the country that hid the fact that its reported reserves in 1997 were wholly offset by unreported liabilities in the form of forward currency contracts.

The Special Data Dissemination Standard – banker-speak for financial transparency rules – is the order of the day. Although the standard dates back only to 1996, there are now 47 countries committed to it. The idea is to set a high norm for countries wishing to maintain access to the global capital market. To help out, the IMF operates an electronic bulletin board with links to the national subscribers.

But despite this advance, and despite Summers' emphasis on printing all the news that fits, one should not exaggerate the role of information in preventing financial crises. After all is said and done, lenders not only will know less than borrowers, but will be competing for the opportunity to take advantage of the ignorance of other lenders.

What's more, the value of information as a tool of self-regulation is undermined by adverse selection: the riskiest debtors are the ones most likely to continue to borrow when interest rates are raised in response to credit worries. Didn't financial institutions know that with Russia still selling paper after short-term rates reached 70 percent, there was likely to be a Russian failure? Did it stop them from lending?

THE REALLY HARD PART

Once everyone has raised a glass to financial transparency, the real fun begins. Some analysts, typically those more sympathetic to developing-country problems, call for new international institutions capable of making a heavily regulated system work better. They wish for greater international capital flows, but in a form that insures that the cash will be used toward socially desirable ends.

On the other side are those with an ax to grind with established financial institutions such as the IMF. Lenders, they say, should be no more protected from loss than the owners of equity. If this means higher interest rates and diminished capital flows, so be it.

Grand proposals for reform from the first group of analysts come in three flavors. At the top of the list is a new international regulatory authority in one form or another – a central bank, a central insurance agency, a

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credit rating agency. Second is an international bankruptcy statute that gives defaulters a chance to stay open for business. Third (a favorite of the United Nations) is the construction of regional and sub-regional institutions to help developing countries adapt to the new realities of global capitalism.

I will spare readers a detailed review of these interventionist approaches. In broad terms, they all amount to efforts to extrapolate to the international level what now seems to prevent financial panic at the national level. But scaling up successful national institutions would be no small feat. Reformers face the same sovereignty issues that have dogged every effort at world government. And even if the reforms with real teeth could be put in place, they might well undermine the more desirable effects of market forces.

Other countries are gradually moving to similar systems in which inflation targeting rather than exchange stability becomes the first order of monetary policy.

On the other side of the divide are free-market types inclined to emphasize the evils of moral hazard – the tendency for borrowers to give short shrift to credit risk if somebody stands ready to bail them out. The solution to moral hazard is to eliminate the implicit or explicit protection against default by curbing the role of the IMF. Thus, in the world imagined by these reformers, loans would still be made, but lenders would be on notice to charge more on riskier projects and to demand good collateral.

Stripped to essentials, this is a back-to-the-future fix not unlike the invisible hand that regulated the 19th-century global economy through the gold standard. One might wish to add a modern twist in the form of global private banks that could lend more because their diversified portfolios would be less vulnerable to regional shock.

While this approach is compatible with current efforts by the United States to alter the terms on lending from the IMF's Supplementary Reserve Facility, the proposals go well beyond those efforts. At root, they are anti-Keynesian: they call for limited future official action, and place considerable faith in markets to cope with risk through credit analysis and diversification.

Neither grand approach will be followed, because each presumes failures greater than have been realized. Markets simply haven't taken the sort of beating they endured in the Great Depression. Moreover, in contrast to the debt crisis of the 1980's, recovery has been relatively quick. Smaller and less dramatic alterations are in the cards, though, and for good reason: transactions involving developing countries are now more than $1 trillion annually, up from less than $200 million in the 1980's. And global market transactions of all types come to more than $2 trillion a day.

Consider some recent incremental changes. Repeal of the restrictions in the Glass-Steagall Act that limited the financial services banks in the United States will permit consolidation within the financial sector. Increases in reserves mandated by the Bank of International Settlements will toughen the big banks' capacity to withstand currency shocks. The so-called Basel II standards go a step further, officially factoring in the riski-

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ness of lending portfolios in setting minimum reserve requirements.

Note, too, that the recent default by Ecuador broke a longstanding precedent: the IMF is apparently no longer rigidly opposed to doling out cash to defaulters before they have signed formal workout agreements with private creditors. This will increase the pressure on lenders to assess international credit risk with the care they use to assess domestic risk. Last, but not least, creditor countries are well on their way to writing off the unpaid – and unpayable – debts of very poor countries, permitting them to start afresh in global capital markets.

THE REST OF THE AGENDA

That still leaves two big topics on the global financial agenda. One is exchange-rate regimes. Formerly, there were three types: fixed, floating and "pegged" somewhere in the middle. Now, with recent changes in Latin America, the world seems to be moving rapidly to the two extremes. The other issue is capital controls: should there be limits on short-term flows?

Exchange Rates

The exchange-rate issue is as much about macroeconomic stability as it is about trade competitiveness. A fixed rate with free movement of capital implies a need for rigid monetary and fiscal discipline. Protecting exchange-rate stability sometimes requires heavy sacrifice in terms of employment and output.

A floating rate, by contrast, gives the central bank the discretion to ease credit in the face of changing domestic needs. That is what Brazil, after its currency devaluation last year, has opted for. Other countries in the region, and around the globe, are gradually moving to similar systems in which inflation targeting, rather than exchange stability, becomes the first order of monetary policy.

Still others, notably Argentina, are trying to cope with similar tensions in policy priorities by moving from a peg in which exchange rates can roll with the punches to a permanently fixed exchange rate. This is justified in much the same way the parent of a 6-year-old might justify putting a lock on the cookie jar: central bankers simply can't be expected to muster the will to make unpopular choices in a pinch.

The case for an Argentine-style currency board is only as sound as a government's commitment to allow interest rates to climb and employment to fall in order to defend the exchange rate. Not very many countries are in that position. Argentina has the considerable advantage of history on its side: it grew rapidly before 1914, when monetary authorities were effectively handcuffed by the international gold standard. But the majority of developing countries were colonial possessions then. And even in the case of Argentina, it took runaway inflation to make the conversion to a currency board palatable.

Note, too, that Argentina has been forced to weather two sharp recessions under the currency board – one accompanying the Mexican peso collapse in 1995, the other last year as a consequence of Brazil's fall from grace. Few countries would be able to sustain such costs.

Not surprisingly, then, most developing countries seem to be moving in the direction of a floating rate. The issue is in greatest doubt in Latin America, where a Free Trade Area of the Americas is supposed to be in place by 2005 and a currency area based on the dollar is a contender. Indeed, for Mexico and Canada, where trade is highly concentrated within the region, Argentine-style dollarization could be a practical option even

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today. All that is lacking is the creation of 13th and 14th Federal Reserve Districts in Toronto and Mexico City.

Capital Controls

There is now substantial sentiment in the developing world for freer trade and capital flows. Malaysia, with its crisis-induced controls over capital exit, is very much a case apart. There, the decision to prevent capital flight was as much a consequence of a political power struggle as it was a policy decision. And while the policy apparently worked, in the sense that it buffered Malaysia from the worst of the Asian financial crisis in 1998, the Malaysian economy had some secret assets that helped it through. Malaysia's exports amounted to a remarkable 118 percent of gross domestic product in 1998. Few economists believe that weaker economies could pull off a trick like Malaysia's without losing access to foreign capital – especially after attempts during the 1980's in Latin America proved so unsuccessful.

On the other hand, the case for limiting short-term capital inflows is a matter of lively debate. Sebastian Edwards of UCLA's Anderson School of Business argues that the widely touted efficacy of Chile's controls has been much exaggerated. And then there is the not-so-small matter of whether countries really want to make do without the benefits of cheap hot money: Chile eliminated its tax on short-term bank deposits by foreigners in 1998 as part of an effort to encourage greater inflows.

Barry Eichengreen at the University of California at Berkeley takes the opposite position. He accepts and welcomes the fact that the Chilean controls changed the maturity structure of foreign lending to Chile without having much effect on total foreign investment. That is precisely what is needed, he argues. And elimination of the tax made sense, he says, once Chile ceased to be a favorite refuge for foreigners in search of higher interest on short-term deposits.

Thus, Chile, like Malaysia, turns out to be a special case. Chile wished to avoid in the 1990's what had happened in the 1980's, when large capital inflows gave way to a major depression. And by virtually any measure, its policy of discouraging short-term investments without barring them proved a success. But short-term capital controls have been problematic elsewhere and have not survived very long. They are best thought of as a transitional tool, to be used while other domestic policies are strengthened.

NOT WITH A BANG...

The year 2000 has already begun auspiciously. And, absent a major and unanticipated reversal in the United States, the world economy should finally achieve the more balanced expansion needed to keep third world development on track. Capital flows are likely to perk up. And with commodity prices apparently poised to recover, resource-rich developing countries will have a better shot at the brass ring.

In such an environment, pleas for fundamental financial reforms are likely to lose their urgency. Goldilocks has not yet learned to speak Thai and Portuguese, however: new cyclical problems will no doubt emerge in the developing world, and there will then be a need for cash and advice from developing countries to lighten the burden. But calls to revolution, heard from the ramparts of international finance in 1997 and 1998, aren't likely to be heard again anytime soon.

Nostalgic for the years of living dangerously? Be thankful we have the chance to worry about lesser matters.

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WORLD DEPOPULATION

Last One Out Turn Off the Lights

The year 2000 will conclude a century of utterly unprecedented population change – an abrupt, dramatic departure from previous experience. And the best is yet to come: I predict that developments in the 21st century will unfold in ways that startle even battle-tested demographers who think they are beyond surprise.

By Nicholas Eberstadt

ALBERTO RIZZO/PHOTONICA

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WORLD DEPOPULATION

Although exact global numbers can never be known, population counters generally believe that the number of humans on the planet exceeded six billion sometime last year, and will total about 6.08 billion by the middle of this year. Data for the year 1900 are naturally even less precise, but a reasonable guess for the total population in that year is around 1.65 billion. Thus, in a century, world population almost quadrupled. No previous population boom even comes close, in either percentage terms or absolute numbers.

By historical yardsticks, moreover, the population explosion continues. The two premier demographic agencies, the United States Census Bureau and the United Nations Population Division, both project a rate of increase of 1.3 percent this year. That is more than twice the average rate in the 19th century and something like four times the pace across the entire millennium. The total population is increasing by almost 80 million people a year – perhaps 10 times the average annual increase in the 19th century.

Yet, paradoxically, the trend appears to have reached a monumental turning point. For as the 21st century commences, the tempo of population growth is unmistakably in decline.

As rapid as the current rate of natural increase appears to be against the backdrop of history, it is nonetheless considerably slower than in the immediate past. In the early 1960's, for example, the pace exceeded 2.2 percent per year – a percentage point greater than the rate anticipated for the year 2000. The growth in absolute numbers apparently peaked at 85 million a year in the late 1980's, and has since been declining gradually.

The past generation demonstrated that it is possible for fertility levels to fall with startling speed, even in low-income societies.

THE LONGEVITY EXPLOSION

To estimate population trends, it is necessary first to understand the forces that generated the explosive acceleration, the peak, and the decline in the world's population growth during this century.

The population explosion was entirely the result of health improvements and the consequent expansion of life expectancy. Between 1900 and 2000, life expectancy at birth at least doubled from something like 30 years to 63 years. Indeed, other things being equal, that health explosion would have resulted in a far greater growth in human numbers than has actually been witnessed. Rough calculations suggest that the world's population would be more than 50 percent larger today if our century's recorded revolution in longevity had unfolded in the absence of declining birth rates.

SECULAR FERTILITY DECLINE

The world's population currently totals about six billion, rather than nine billion, because fertility patterns were also changing over the century. And of all the diverse changes in fertility trends registered over the past 100 years, the most significant has been "secular fertility

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decline" – that is to say, sustained and progressive reductions in family size due to deliberate birth control.

In historic terms, this trend is a very new phenomenon: it apparently had not occurred in any human society until about two centuries ago. France, where the trend began by the early 19th century, was the first country to experience a sustained decline. Since that beginning, the decline has spread unevenly across the planet, embracing an ever-greater fraction of the global population and depressing voluntary childbearing in the affected societies to successive record lows.

A milestone in the process was passed during the era between the world wars. Fertility rates in the industrial countries during peacetime dropped below the "net replacement" level – that is, below the level necessary for long-term population stability.

The inter-war fertility dip proved to be temporary, however, neither sufficiently prolonged nor sufficiently deep to bring on actual population decline. Indeed, the postwar baby boom, presumably the result of postwar optimism and pent-up demand for children, erased visions of negative population growth on this side of the Atlantic.

But in the last quarter-century, sub-replacement fertility has come back with a vengeance, slipping to levels previously unimaginable in prosperous societies at peace. Sub-replacement fertility has now been experienced for a generation or more in a growing number of countries, and it has come amazingly close to becoming the norm the world over. Indeed, almost half of the world's population now lives in societies that aren't having enough babies to sustain their numbers.

In the early 1950's, the planet-wide "total fertility rate" – the average number of children per woman per lifetime – is thought to have stood at about five. Next year, the global rate will likely be below 2.8. That dramatic reduction in five decades has already curbed the relative and absolute pace of world population growth, despite increasing life expectancy. But even more dramatic changes – ones never contemplated by Malthusians – lie ahead.

The past generation demonstrated that it is possible for fertility levels to fall with startling speed, even in low-income societies. And while we now know that countrywide fertility levels can plunge well below replacement and remain there for decade after decade, we do not yet know how low they can go. But it is entirely possible that, contrary to even quite recent expectations, sub-replacement fertility will soon typify the world as a whole. Were that to occur, the 21st century could turn out to be a time in which world population peaked and thereafter diminished.

The population has fallen before – in the

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14th century, for example. Those earlier reductions, however, were the consequences of catastrophes: bubonic plague decimated societies across Asia, Europe and North Africa between 1333 and 1355. The 21st century population implosion, by contrast, would take place under conditions of steadily improving life expectancy and living standards.

Even so, such a depopulation would confront the world with unique socioeconomic challenges – quite possibly formidable ones. Though negative population growth is not yet imagined to be a problem, we must now recognize that it is possible that such a trend, rather than Malthusian overpopulation, will emerge as the great demographic issue of the coming century.

FERTILITY TRENDS AT CENTURY'S END

Many analysts do not appreciate just how far low-fertility regimens have already progressed. To understand the current situation, divide the world into three categories: (1) countries where fertility levels are currently believed to be below replacement, (2) countries where fertility is above replacement but rapidly declining, and (3) countries where fertility levels remain high and seemingly immune to secular fertility decline.

1) Sub-replacement Fertility

Table 1 catalogues the countries in this first category. Since the numbers are extrapolations based on recent history, they may exaggerate the dimensions of fertility decline. On the other hand, the population data for most places listed here is both relatively up-to-date and reasonably accurate. So it is equally likely that the numbers understate the trend. Indeed, this list, based on Census Bureau estimates, is more conservative than the United Nations Population Division's figures.

In all, 79 countries and territories, with 44 percent of the world's population, fit the below-replacement category. And the countries themselves are strikingly diverse in geography, culture and level of economic development.

Virtually every advanced industrial democracy is on the list. In fact, 27 of the Organization for Economic Cooperation and Development's 29 members have total fertility rates of less than 2.1 – the rate needed to replace the population over the long haul. The two exceptions, by the way, are Mexico and Turkey, countries at the low end of the Organization for Economic Cooperation and Development as measured by income and education. Within that group, the highest total fertility rates are in the United States (2.07) and Iceland (2.04) – levels just shy of replacement. At the other end, Germany and Spain's current rates are just over 1.2, and Italy's is even lower.

CHRISTOPHER ARNESEN/TONY STONE

Most members of the Organization for Economic Cooperation and Development are in Western Europe, which had a collective total fertility rate of 1.4 in 1998. But overall fertility levels appear to be

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even lower in Eastern Europe – by Census Bureau reckoning, about 1.3. Bulgaria, in fact, has the lowest fertility level ever witnessed in a modern nation not at war, with women averaging only 1.14 births in a lifetime. Were that pattern maintained indefinitely, each new generation would be half the size of the one before. In all of Europe, only remote Albania and the tiny outposts of Gibraltar and the Faeroe Islands are thought to be above-replacement enclaves – and in those cases, only barely so.

Within the former Soviet Union, the fertility rate has fallen far below replacement since the collapse of the Soviet empire. While fertility rates in the six predominantly Islamic former Soviet republics all appear to be above the net replacement level (from Kazakhstan's projected total fertility rate of 2.1 to Tajikistan's 3.5), the other nine states are far below replacement. In the Russian Federation, by far the most populous of the former Soviet republics, fertility is a shade over 1.3. In the next largest, Ukraine, the rate is also just over 1.3 – as it is in Belarus and in the three Baltic states. With a projected fertility rate of 1.88, Moldova would rank as distinctly the most fertile European enclave within the former Soviet Union today.

Secular fertility decline, as already noted, originated in Europe. And today, virtually every population group of European origin in the world has a fertility rate below replacement. But these account for only about a billion of the 2.5 billion people living in sub-replacement regions. Below-replacement fertility thus is no longer an exclusively European – or even predominantly European – phenomenon.

Much of the Caribbean is now bearing children at below the replacement rate. Island societies as culturally and economically diverse as Barbados, Cuba and Guadeloupe have fertility rates below that of the United States. A few tiny territories off the coast of Africa and in Micronesia have apparently also slipped into the sub-replacement category. But the largest concentration of sub-replace-

TABLE I
COUNTRIES AND TERRITORIES WITH SUB-REPLACEMENT FERTILITY IN 1998:
TOTAL FERTILITY RATES, US CENSUS BUREAU PROJECTIONS

OECD COUNTRIES	
Australia	1.82
Austria	1.37
Belgium	1.49
Canada	1.65
Czech Republic	1.17
Denmark	1.68
Finland	1.73
France	1.63
Germany	1.25
Greece	1.31
Hungary	1.45
Iceland	2.04
Ireland	1.82
Italy	1.19
Japan	1.46
South Korea	1.79
Luxembourg	1.63
The Netherlands	1.49
New Zealand	1.91
Norway	1.8
Poland	1.36
Portugal	1.35
Spain	1.21
Sweden	1.76
Switzerland	1.46
United Kingdom	1.64
United States	2.07

OTHER NORTH AMERICA	
Bermuda	1.78
Saint Pierre & Miquelon	1.6

EASTERN EUROPE AND THE FORMER SOVIET UNION	
Bosnia & Herzegovina	1.14
Bulgaria	1.14
Croatia	1.54
Macedonia (Former Yugoslavia)	2.06
Montenegro	1.76
Romania	1.17
Serbia	1.75
Slovakia	1.27
Slovenia	1.17
Estonia	1.29
Latvia	1.2
Lithuania	1.46
Armenia	1.69
Belarus	1.34
Georgia	1.54
Moldova	1.88
Russia	1.34
Ukraine	1.35

NON-OECD EAST ASIA	
China	1.8
Hong Kong S.A.R.	1.36
Taiwan	1.77
Macau	1.55
Singapore	1.46
North Korea	1.8
Thailand	1.84

LATIN AMERICA AND THE CARIBBEAN	
Anguilla	1.98
Antigua & Barbuda	1.74
Aruba	1.81
Barbados	1.85
Cayman Islands	1.34
Cuba	1.56
Dominica	1.9
Guadeloupe	1.84
Martinique	1.8
Montserrat	1.83
Netherlands Antilles	1.84
Puerto Rico	2.03
Saint Vincent & the Grenadines	1.97
Trinidad & Tobago	2.09
Turks & Caicos Islands	1.71

AFRICA	
Saint Helena	1.5
Seychelles	1.98

OTHER EUROPE	
Andorra	1.23
Guernsey	1.68
Jersey	1.5
Lichtenstein	1.61
Malta	1.73
Man, Isle of	1.67
Monaco	1.7
San Marino	1.51

SOURCE: US Census Bureau

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ment populations is in East Asia. Japan was the first non-European society to report sub-replacement fertility in peacetime. The rate fell below replacement in the late 1950's and has remained there for the past four decades. The United States Census Bureau puts Japan's total fertility rate at 1.46 – and Japanese authorities say it is even lower.

All four East Asian tigers – Hong Kong, South Korea, Singapore and Taiwan – have

ALISON WRIGHT/CORBIS

been at below-replacement fertility since the early 1980's. South Korea has the highest fertility level of that group, with a rate estimated at just under 1.8; Hong Kong, with a rate of 1.36, is lowest. Thailand's fertility rate also fell below replacement in the last decade; its current estimated rate is a bit over 1.8.

By far the largest sub-replacement population, though, is China's: total fertility dropped below net replacement in the early 1990's and was thought to be 1.8 for 1998. China's fertility, of course, has been affected by Beijing's two-decades-old population-control campaign. It is only reasonable to suppose that the Chinese State Family Planning Commission's strident and muscular intervention in the name of a "One Child Norm" has had an impact. But it is not possible to say how great that impact has been – or what would happen if that program were abandoned.

2) Above-replacement, but Rapidly Declining, Fertility

Another large portion of humanity lives in countries where fertility is still above the net-replacement level, but is declining rapidly. Just how large a fraction of humanity this group encompasses, of course, depends upon one's definition of rapid.

According to the United Nations Population Division's most recent estimates, total fertility rates for less-developed regions dropped by half between the late 1960's and the late 1990's, from an average of six births per woman per lifetime to three. Of course, those averages were strongly affected by the trend in China, and China's circumstances were anomalous. But the Chinese experience should not divert attention from the breadth and scale of fertility declines in other low-income settings.

Table 2 presents United Nations Population Division estimates of fertility change between the late 1960's and the late 1990's in the 15 most populous developing countries – home to three-quarters of the population of the less-developed regions. During those three decades, fertility levels fell by over half in seven of the 15 – which is to say, in five countries besides China and Thailand. Two of those five (Brazil and Mexico) are traditional Catholic societies, while the other three (Bangladesh, Iran and Turkey) are Islamic. In all five, of course, there is great social pressure to produce large families.

Note that 12 of the 15 countries in Table 2

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experienced fertility declines of two-fifths or more while, in absolute terms, 10 of the 15 registered declines in total fertility of over three births per woman! Only one of the 15 (Ethiopia) has yet to reduce fertility significantly. Note, too, that despite the religion-based pronatal traditions of Mexico and Iran, their fertility rates have dropped by four births per woman in just 30 years.

Table 2 underscores a more general feature of the fertility decline now under way in low-income countries: there is no single obvious cause. We think of fertility as being inversely associated with living standards, and in a very general way it is. Yet one of the world's poorest countries, Vietnam, has a fertility level of 2.6 – about the same as the United States had a few decades ago. The rate of income growth is an equally problematic indicator of fertility decline. For while dramatic fertility reductions coincided with relatively rapid growth in Indonesia's gross domestic product, for example, the per capita gross domestic product actually shrank in Iran over those same years – and yet Iran's fertility declines were even steeper than Indonesia's.

TABLE 2
UNITED NATIONS POPULATION DIVISION ESTIMATED AND PROJECTED FERTILITY CHANGE
FOR TODAY'S 15 MOST POPULOUS LOW-INCOME COUNTRIES: 1965/1970 TO 1995/2000

COUNTRY	PROJECTED POPULATION MID-YEAR 1999 (IN MILLIONS)	TOTAL FERTILITY RATE 1965/1970 ESTIMATED	TOTAL FERTILITY RATE 1995/2000 PROJECTED	TFR CHANGE PERCENTAGE	TFR CHANGE ABSOLUTE
China	1,267	6.1	1.8	-70	-4.3
India	998	5.7	3.1	-45	-2.6
Indonesia	209	5.6	2.6	-54	-3.0
Brazil	168	5.4	2.3	-58	-3.1
Pakistan	152	7.0	5.0	-29	-2.0
Bangladesh	127	6.9	3.1	-55	-3.7
Nigeria	109	6.9	5.2	-25	-1.2
Mexico	97	6.8	2.8	-60	-4.0
Vietnam	79	6.0	2.6	-56	-3.4
Philippines	74	6.0	3.6	-40	-2.4
Egypt	67	6.6	3.4	-48	-3.2
Iran	67	7.0	2.8	-60	-4.2
Turkey	66	5.6	2.5	-56	-3.1
Ethiopia	61	6.8	6.3	-7	-0.5
Thailand	60	6.1	1.7	-72	-4.4

The total fertility rate (TFR) is a measure of average births per woman per lifetime. 1999 and 1995/2000 figures are "medium-variant" projections.

SOURCE: United Nations, *World Population Prospects*

We often hear that education, particularly education of women, has a big influence on fertility. But Table 2 shows no clear-cut pattern. According to the World Bank, Nigeria's 1995 adult literacy rate was higher than Egypt's – but its total fertility rate was also higher, and by almost two births per woman. Conversely, the World Bank estimates that adult literacy is currently 50 percentage points lower in Bangladesh than in the Philippines, and the gap between male and female literacy rates is closer to 70 percentage points. Yet fertility is lower in Bangladesh than in the Philippines, and Bangladeshi fertility declines over the past three decades have been distinctly greater in magnitude.

It has become a matter of faith that government population control initiatives have been instrumental, if not indispensable, in fertility decline in low-income settings. And it is true that most of the developing countries reporting major fertility declines in recent decades did have national birth control programs in place – some of which were overtly coercive. But even though Brazil has never sponsored family planning, its fertility decline in percentage terms has been almost identical to Mexico's, where a strong national program operates. And although Brazil is both poorer and more poorly educated than Mexico, its

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fertility level is lower.

It is all too clear, then, that the standard socioeconomic predictors of fertility differences are of distinctly limited utility. Indeed, one is tempted to conclude that the strongest predictor of a country's fertility level is the calendar: virtually everywhere, fertility has been falling over time.

TABLE 3
FERTILITY DECLINE IN "RESISTANT" REGIONS:
ESTIMATES AND PROJECTIONS FOR SELECTED COUNTRIES, 1975/1980 TO 1995/2000

REGION OR COUNTRY	TOTAL FERTILITY RATE 1975/1980 ESTIMATED	TOTAL FERTILITY RATE 1995/2000 PROJECTED	TFR CHANGE PERCENTAGE	TFR CHANGE ABSOLUTE
MIDDLE EAST				
Algeria	7.2	3.8	-47	-3.5
Jordan	7.4	4.9	-34	-2.6
Libya	7.4	3.8	-49	-3.6
Morocco	5.9	3.1	-47	-2.8
Syria	7.4	4.0	-46	-3.4
SUB-SAHARAN AFRICA				
Botswana	6.4	4.4	-32	-2.0
Cote d'Ivoire	7.4	5.1	-31	-2.3
Kenya	8.1	4.5	-45	-3.7
Sudan	6.7	4.6	-31	-2.1
Zimbabwe	6.6	3.8	-42	-2.8

SOURCE: United Nations, *World Population Prospects*

3) High and "Resistant" Fertility

The third share of humanity lives in countries where total fertility rates are very high – say, 6.0 or more – and for which convincing evidence of fertility decline has yet to be reported.

People often assume that such countries typify low-income regions. But since fertility levels in the less-developed world as a whole are thought to have fallen by half over the past 30 years, that cannot be the case. In the entire Asian land mass, total fertility rates were down by half between the late 1960's and the late 1990's, from about 5.7 to 2.8. In Latin America and the Caribbean, rates have fallen from roughly 5.6 to 2.7.

The regions where fertility remains highest (and where fertility declines have been least spectacular) are sub-Saharan Africa and the Islamic expanse to its north and east – more specifically, the Arab Middle East. These areas had a population of about 930 million in 1998 – a little less than one-fifth of the total for less-developed regions and a bit under one-sixth of the world's total.

Fertility levels are much higher within this agglomeration than in any other comparably sized group of nations. However, the image of uniformly high, persistently "traditional" fertility regimens is already badly outdated. A revolution in family formation patterns has begun in the region.

Table 3 suggests that it is no longer accurate to describe the Arab world as isolated from fertility decline. Over the past 30 years, in fact, fertility in "Northern Africa" – the territory stretching from Western Sahara to Egypt – is believed to have dropped by almost half, to an average of 3.3 births per woman. There are still outposts of awesomely high and nearly unyielding fertility: the Gaza Strip (with a total fertility rate of 7.3), Oman (5.9), Saudi Arabia (5.8) and Yemen (7.6). But these four places account for barely 40 million of the Arab Middle East's quarter of a billion people. Elsewhere, relatively rapid fertility decline is under way – even in some Arab countries. In Algeria, Libya, Morocco and Syria, total fertility rates have dropped by nearly half in just the past two decades. And there are now Arab countries – notably, Tunisia and Lebanon – where fertility levels are close to the net-replacement level.

Even less generally appreciated than the fertility reductions throughout the Arab world is the fact that fertility decline appears

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to be under way in parts of sub-Saharan Africa too. The recent Kenyan experience is particularly noteworthy: over the past two decades, the country's total fertility rate fell by two-fifths, to an average of 3.7 births per woman.

Kenya speaks to another aspect of fertility decline in low-income countries worth bearing in mind: the long lag between its onset and the moment demographers can assay its magnitude. Like all sub-Saharan countries, Kenya lacks reliable vital statistics. Its population trends must therefore be divined from occasional censuses and episodic surveys.

Kenya collects more demographic information than most. Even so, the pace of the country's recent fertility declines has surprised the experts. In 1994, the United Nations Population Division's very lowest projection for Kenya for the early 1990's was a total fertility rate of 6.2. In fact, the total fertility rate was 5.4, almost one birth per woman lower than the lowest contemporary United Nations projections had imagined. By the same token, contemporary fertility estimates for some other sub-Saharan locales may be way off base.

DUANE RIEDER/TONY STONE

WHAT HAPPENS NEXT?

Barring utter cataclysm, population trends in the next century will be dominated – indeed, determined – by trends in fertility. That's just a matter of arithmetic as long as death rates remain low and stable. But what course will world fertility trends take?

The United Nations Population Division's Expert Group Meeting on Below Replacement Fertility summarized the state of knowledge succinctly: "There exists no compelling and quantifiable theory of reproductive behavior in low-fertility societies." The same might be said about reproductive behavior in contemporary societies with higher levels of fertility. As a practical matter, fertility prediction is educated guesswork.

Some eminent demographers, notably Charles Westoff, have advanced a "homeostatic" hypothesis suggesting that sub-replacement fertility rates will be drawn upward to replacement as if by "a magnetic force." But that is pure speculation. Other demographers have recently suggested that total fertility rates in stable industrial societies are unlikely to dip below 0.7 – the level already observed in eastern Germany after reunification. The discomfiting reality is that today's sub-replacement fertility patterns are terra incognita, and that demographers don't even have much to say about what happens once a population enters it.

The situation is not much more certain for countries still above the replacement rate. The demographer Dudley Kirk has argued that "no country has been modernized without going through the demographic transition" that leads to low levels of both mortality and

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fertility. But the definition of modernization must now be sufficiently elastic to stretch around cases like Bangladesh and Iran – countries where low average incomes, high incidences of extreme poverty, slow economic growth, mass illiteracy, high levels of mortality and other ostensibly nonmodern characteristics have proved compatible with massive voluntary reductions in fertility.

We now know, moreover, that fertility decline can kick in swiftly in low-income settings. As Table 4 attests, fertility levels have declined by 1.5 births per woman per decade in some countries for a full quarter of a century. In sub-Saharan Africa, total fertility has been falling by 20 percent per decade, while in Latin America and the Middle East, the pace is around 30 percent per decade. The comparable figure for East Asia is nearly 40 percent, thus far sustained for two and a half decades.

TABLE 4
RAPID FERTILITY DECLINE IN LOW-INCOME COUNTRIES:
SELECTED EXAMPLES OF 25-YEAR CHANGES IN ESTIMATED TOTAL FERTILITY RATES

REGION OR COUNTRY	PERIOD	TOTAL FERTILITY RATE		TFR CHANGE PER DECADE	
		INITIAL	FINAL	PERCENTAGE	ABSOLUTE
EAST ASIA					
China	1965/1970-1990/1995	6.1	1.9	-37	-1.7
Republic of Korea	1960/1965-1985/1990	5.6	1.8	-37	-1.5
Singapore	1950/1955-1975/1980	6.4	1.9	-39	-1.8
Thailand	1965/1970-1990/1995	6.1	1.9	-37	-1.7
LATIN AMERICA					
Colombia	1960/1965-1985/1990	6.8	3.2	-26	-1.4
Guyana	1965/1970-1990/1995	6.1	2.6	-29	-1.4
Mexico	1970/1975-1995/2000	6.5	2.8	-29	-1.5
MIDDLE EAST					
Tunisia	1970/1975-1995/2000	6.2	2.6	-30	-1.5
SUB-SAHARAN AFRICA					
Kenya	1970/1975-1995/2000	8.1	4.5	-21	-1.5

1995/2000 are "medium-variant" projections.

SOURCE: United Nations, *World Population Prospects*

Forget theory here. It is a fact that fertility levels have fallen by three-fifths in just 25 years in one Arab country (Tunisia) where upward of half of all women of childbearing ages have had no formal schooling, and by 45 percent in a sub-Saharan country (Kenya) with a dismal incidence of poverty. For whatever reasons, the constraints against fertility decline appear to be receding remarkably in our time – and may possibly continue to recede in the coming century.

The United Nations' medium-variant fertility projections envision a world 30 years hence with an overall fertility rate of 2.23 – 1.75 in more-developed regions and 2.31 in less-developed regions. That would mean a global population of 7.8 billion in 2025 and 8.9 billion in 2050.

While the die seems to be cast for the advanced industrial countries, it is easy to imagine the factors that significantly raised the pace of population growth above the medium variant elsewhere. For example, a slower-than-expected fertility decline in the Indian sub-continent. Or a later-than-postulated advent of fertility decline in sub-Saharan Africa. Or the resumption of above-replacement fertility in China. But it is also possible to imagine alternatives that lead to a cessation of population growth and a subsequent depopulation, despite assumed steady improvements in life expectancy.

ONE SCENARIO FOR GLOBAL DEPOPULATION

The United Nations Population Division's

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low-variant population projections, in fact, offer just such a vision. In this scenario, global life expectancies – and life expectancies in every region of the world – rise steadily over the first half of the century. But population crests in 2040 at 7.47 billion (growing by about 25 percent, or about 1.5 billion people, between now and then), drops by about 120 million between 2040 and 2050, and then continues to decline by over 25 percent per generation.

Of course, assumptions about fertility drive this model. The low-variant scenario imagines net-replacement fertility for the world as a whole by the years 2000-2005 – that is to say, more or less now – and sub-replacement fertility thereafter. We must therefore ask whether such presumptions are plausible.

One way of assessing these projections is to compare them to the recent historical past. Table 5 examines the low-variant model's assumed fertility declines for the three decades between the early 1990's and the early 2020's and compares them with the actually recorded declines over the three previous decades.

For every area of the world, these low-variant projections imagine vastly lower fertility levels by the early 2020's than ever before recorded. Some may regard that in itself as a sign of inherent implausibility. But looked at a bit differently, the low-variant projections simply suggest a continuation of existing trends – and in fact, a slight deceleration from the pace of decline between the early 1960's and the early 1990's.

The only region of the world for which the low-variant projections imply a faster fertility decline is Africa. Here, fertility would have to fall as rapidly in absolute terms in the coming decades as it did in Asia from the early 1960's through the early 1990's. That likelihood is, of course, debatable. But in light of the Asian and Latin American experiences, one can hardly maintain that the low-variant projections for Africa are out of the realm of possibility. And the assumptions embodied in the scenario projecting a peaking and subsequent decline in global population do not seem especially heroic.

TABLE 5: GETTING TO DEPOPULATION: UNITED NATIONS POPULATION DIVISION 1998 LOW-VARIANT FERTILITY ASSUMPTIONS IN HISTORICAL PERSPECTIVE

	TOTAL FERTILITY RATE		ASSUMED TFR CHANGE PER DECADE		ACTUAL TFR CHANGE 1960/1965-1990/1995 PER DECADE	
REGION	1990/1995 ESTIMATED	2020/2025 ASSUMED	PERCENTAGE	ABSOLUTE	PERCENTAGE	ABSOLUTE
WORLD	2.93	1.78	-15	-0.4	-16	-0.7
MORE-DEVELOPED REGIONS	1.68	1.39	-6	-0.1	-12	-0.3
LESS-DEVELOPED REGIONS	3.27	1.84	-17	-0.5	-18	-0.9
Asia	2.85	1.64	-17	-0.5	-20	-0.9
Latin America & Caribbean	2.97	1.67	-17	-0.4	-21	-1.0
Africa	5.47	2.64	-22	-0.9	-7	-0.4

SOURCE: United Nations, *World Population Prospects*

POPULATION ISSUES FOR A DEPOPULATING WORLD

If the pace of global fertility decline continues for another generation – and the world consequently heads toward negative population growth – the population issues of the future won't resemble those of the recent past. In a world of long life expectancies, small families and negative population growth, the Malthusian specter will cease to be relevant to public policy. On the other hand, pervasive and prolonged sub-replacement fertility in

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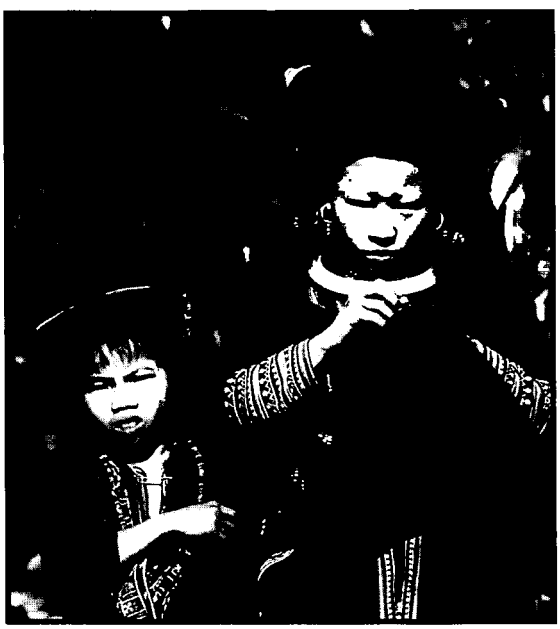
the context of generally improving health would pose social, political and economic challenges of its own.

Rising life expectancy guarantees that the world's population will be aging in the com-



ing century. If fertility is low and falling, it will age all the more rapidly. At the moment, the median age of the world's population is about 26 years. If the trajectory anticipated by the current United Nations low-variant projections were to come to pass, this figure would rise to 44 years – higher than the medians for even the "elderly" populations like Japan in our contemporary world.

Rapid global aging would have a number of ineluctable implications. For one thing, it would increase the salience of addressing the health-care and income-security needs of the elderly. In Western countries, current public programs for these purposes are coming under increasing demographic pressure, and require far-reaching overhauls to maintain their financial soundness. In low-income countries, where coverage by public pensions and health systems is limited, the issue of how to take care of the elderly could be all the more pressing.

Rapid global aging would also likely force the question of how to train the workers of the future. It is not difficult to imagine circumstances in which a majority of a country's laborers were over the age of 50. And such a scenario would exacerbate the already existing tensions between an educational system designed to train the young and the desire of workers to enjoy long, worthwhile careers in an increasingly complex economy.

Finally, prolonged sub-replacement fertility in a world of long life expectancy would presage a radical change in family structure along the lines of one-child China. For the first time in the human experience, there could be societies in which the only biological relatives for many people would be their ancestors. With sufficiently low fertility for just two generations, people with blood siblings and cousins would become the exception. Exactly how a society would operate under such conditions – how, for example, children would be socialized – is difficult to imagine.

All this is merely constrained speculation. But if it does indeed turn out that today's sub-replacement fertility is only a foretaste of what lies in store, such speculation is hardly an indulgence. Long-term population decline under conditions of steady health improvement is not a disastrous demographic phenomenon – any more than were the 20th century's dual explosions of population and health. But an orderly global depopulation would require strange new adjustments – some of them wrenching – in both economies and societies. And we are more likely to cope with these changes successfully if we have contemplated them in advance. ▪

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CLINTONOMICS

A Report Card

By Timothy Taylor

Whether you love William Jefferson Clinton or hate him, whether you think he should be anointed Emperor or tossed in the clink, it is inescapably true that as he enters his final year as President, the economy is in fine fettle.

In February 2000, the upswing that began in March 1991 reached 107 months. This breaks the previous record for the longest period of sustained growth in a century – a record previously held by great boom of the 1960's (February 1961 to December 1969).

When judging Clinton, grade on a curve

But the extraordinary length of the upswing is not the most surprising news. Just a decade ago, most economists were convinced that unemployment could not fall below 6 percent without igniting inflation. Yet joblessness has been below 5 percent since May 1997, even as inflation has hovered around 2 percent. Unemployment, now about 4 percent, has not been this low since the late 1960's, and inflation hasn't been this tame since the early 1960's.

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CLINTONOMICS

You want more good news? The stock market has been on a roll since the 1980's, with the Dow Jones industrial average tripling since 1992. As recently as 1996, the budget deficit was in the $200 billion range and the White House was forecasting deficits as far as the eye could see. Yet by 1998, the budget was in surplus and the green-eyeshade crew was predicting that this happy state could last into the second decade of the 21st century.

Most delightful of all, the late 1990's have witnessed a surge in productivity. According to recently released figures, productivity growth averaged 1 percent annually from 1973 to 1982, rose to 1.7 percent a year from 1982 to about 1995 and then rose again to 2.5 percent a year from 1995 to 1998.

Productivity is the most powerful determinant of trends in living standards. If per capita gross domestic product rises at 1 percent annually, the standard of living doubles over a 72-year lifetime. However, if income per person grows at 2.5 percent, the standard of living rises sixfold over that same life span. If this recent productivity performance can be sustained, the American experience will change in remarkable ways during the 21st century.

HOW MUCH ARE PRESIDENTS RESPONSIBLE FOR THE ECONOMY?

The Clinton Presidency has certainly benefited politically from this boatload of good news. But how much credit can Bill Clinton fairly claim?

As the elected leader of the world's most powerful nation, the President is always in the limelight. But the United States economy is highly decentralized: although the White House can draft a trade treaty or send the Marines to Haiti, it cannot set wages at General Motors or tell the company when to roll out a new line of Chevy Blazers. Even in macroeconomics, the President rarely has much control over policy. He shares spending and tax decisions with Congress and plays a remote second fiddle to the Federal Reserve on monetary policy. By the same token, no President takes office with a clean slate. For better or worse, each must make do with a work perpetually in progress.

The serious moving and shaking in the United States economy happens in the private sector. The economy has about 5.5 million private companies, with about 800,000 new ones started each year. They operate within a web of regulation that both empowers them – for example, by making contracts enforceable

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The President plays a remote second fiddle to the Federal Reserve on monetary policy.

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– and constrains them. But most business choices – those involving suppliers, production, marketing, accounting, hiring, compensation, sales, R&D, new products and more – are only marginally affected by Washington.

Tax policy affects these decisions, of course, as do the rate and composition of Government spending. But this is like pointing out that you can guide a Flexible Flyer careering downhill: in the end, gravity has more to do with where you end up than does your steering. Similarly, billions of daily business judgments have more to do with the shape and direction of the economy than do the incentives created by Government.

Economic results not only bubble up from the decisions of managers and workers, but are shaped by international forces. Globalization gets the most attention when it is disruptive – as in the rise of Japanese competition in the 1970's, or in the Asian financial meltdown in 1998. But unseen trends and obscure events can also have great impact.

Consider international trade and financial flows. In the 1960's, the United States ran moderate trade surpluses every year. At the end of the decade, imports and exports each equaled about 6.5 percent of GDP. In the 1990's, by contrast, trade was more like 15 percent of GDP, and the United States economy ran a "current account" surplus only in 1991, when the United States recession slowed imports. In 1998 the current account deficit hit an all-time high of $220 billion and may have touched $300 billion in 1999.

Indeed, because of the large and growing trade deficits, the United States economy has become heavily – and seemingly permanently – dependent on inflows of foreign capital. Yet no President chose to make this seismic shift, and it's far from clear that even a determined President could have done much to resist it.

Similarly, it's hard for the White House to bear much responsibility for the policy-making power of the Fed. Jimmy Carter can claim some credit for appointing Paul Volcker to head the Fed in 1979, as can Ronald Reagan for nominating Alan Greenspan in 1987. But the most that the Clinton Administration can claim is to have stayed out of the Fed's way.

Finally, there is the question of what a President inherits – and what he bequeaths. The table on page 53 offers some comparisons of the economic reality inherited by the last four United States Presidents. Clinton took office with an unemployment rate similar to that inherited by Carter and Reagan, while all three faced unemployment rates worse than the one inherited by George Bush. Clinton inherited the lowest inflation rate of the four and Reagan by far the highest.

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CLINTONOMICS

Of the four, Reagan clearly inherited the worst economic situation: high unemployment, towering inflation and the economy on a roller-coaster ride between recessions. Bush inherited an economy that appeared in strong shape, with low unemployment and a long boom well under way.

However, Bush had the misfortune to take office just as the Fed made a lunge against inflation. The benchmark interest rate that banks charge each other for overnight loans rose from 6.1 percent in February 1987, 23 months before Bush entered the White House, to 9.8 percent by March 1989, two months after. Thus, Bush inherited an economy that looked good – yet one in which the Fed was stomping on the brakes.

Carter and Clinton each inherited economic upswings that had been under way for 22 months. In political terms, this may be an ideal time frame for taking credit for a recovery. Indeed, in some ways Bill Clinton was bequeathed the ideal situation. Unemployment was high in January 1993 but was already falling. The unemployment rate dropped to 6.5 percent by December 1993, before Clinton's economic policies could have any real impact. Since inflation was already under control in 1993, there was no immediate danger that the Fed would rain on this President's parade.

The flip side of the economic reality a President inherits is the one he leaves behind. Even if a new President manages to get legislation enacted with all due dispatch – a minimum of six months – major policy shifts rarely have much impact in less than a year.

Thus, in appraising Carter's economic legacy, it's worth remembering that a mere six months after he left office, the economy went into a nasty 16-month tailspin. On the other hand, Bush presided over the first 22 months of what has turned out to be the longest recorded economic upswing in United States history. As for Clinton, the book won't close the day he leaves office. If a recession arrives during 2001 – or, for that matter, in 2002 – it will, in part, be a Clinton recession.

With these reservations duly noted, a President's economic policies still matter. Even one with limited power has more ability to affect the economy than any other public official in the world – save the chairman of the Federal Reserve.

HOW DOES CLINTONOMICS STACK UP?

If ever a Presidency begged to be evaluated on its economic performance, it is this one. After all, the unofficial slogan of the 1992 Clinton campaign was, "It's the economy, stupid."

However, it should be clear by now that a President's economic legacy can't be measured by crude aggregates like the unemployment and growth rates. That would be like comparing the current performances of the chairmen of IBM and Apple Computer solely on this year's profits. Circumstances, history and judgment matter, too.

A more useful approach is to examine actual policy choices. Looking back, I count five moments at which the Administration can fairly claim substantive initiatives.

The first was the 1993 budget, a deficit reduction package that included spending caps and higher taxes on the affluent. It was clearly Clinton's budget, passing Congress without a single Republican vote. But it did not strangle the economy, as its more strident opponents had predicted. Instead, it created the spending discipline that pushed the budget into surplus later in the decade and gave the Fed the discretion to keep interest rates low in the teeth of the economic boom.

A second important Clinton decision was to support the institutions of free trade,

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notably through the passage of the North American Free Trade Agreement and the creation of the World Trade Organization. For ardent free-traders (like me) the President's advocacy often seemed frustratingly half-hearted – as does his current reluctance to embrace reforms of anti-dumping rules. But when push came to shove, Clinton made common cause with Republicans in Congress (and against many in his own party) to drive these deals through.

A third economic initiative for which Clinton deserves credit is really a package of policies, all intended to strengthen the work ethic among low-skilled workers. The best-known is the 1996 Welfare Reform Act, which ended the entitlement status of welfare and imposed work requirements. Clinton had promised during his 1992 campaign "to end welfare as we know it." Even though the package that emerged from the Republican-controlled Congress in 1996 offended his liberal supporters, he bit the bullet.

The Administration supported other steps to raise the living standards of the working poor: the expansion of the earned-income tax credit wage subsidy, expansions of Medicaid to cover the families of the working poor and a higher minimum wage. I'm a bigger fan of the EITC and Medicaid changes than of the minimum wage increase. But recent research suggests that modest increases in the minimum wage do little harm – and may do some good.

The fourth Clinton economic policy of note can be measured by its degree of self-restraint: the White House has not second-guessed the Federal Reserve. A cynic might say that there hasn't been much to criticize. But the Fed did carry out a controversial "pre-emptive strike" against inflation by doubling short-term interest rates, from 3 percent in 1994 to 6 percent in February 1995.

Some Democrats railed against this increase, fearing that Greenspan had a secret agenda to bring on a recession and drive Clinton from office in 1996. But to its credit, the Clinton Administration said little, acknowledging that the first priority was to keep inflation low – thus buttressing the Fed's credibility.

THE PRESIDENTS' ECONOMIC LEGACIES

	UNEMPLOYMENT	INFLATION	HOW LONG UPSWING?	HOW LONG UNTIL RECESSION?
JIMMY CARTER (January 1977)	7.5%	5.2%	22 months	36 months
RONALD REAGAN (January 1981)	7.5%	11.8%	6 months	6 months
GEORGE BUSH (January 1989)	5.4%	4.7%	74 months	18 months
BILL CLINTON (January 1993)	7.3%	3.2%	22 months	—

Giving Clinton credit for a fifth initiative, the repeal of the Depression-era Glass-Steagall Act that kept banks from merging with other financial institutions, is a bit of a stretch. Repeal was hardly the Administration's highest priority. But the bill did pass with White House help, and this limited bank deregulation will open the door to substantial efficiency gains in America's financial-services industry over the next few years.

Others might wish to add to this list of achievements. For example, some would credit the Administration with a resurgence in antitrust activism in light of the Justice Department's much-heralded attack on Microsoft. But whatever one's views on the

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merits of the Microsoft case, it's hard to discern a clear policy emerging. An administration that has overseen record levels of mergers and acquisitions – including a marriage of the oil behemoths Mobil and Exxon – can hardly claim credit for a crusade against corporate size and power.

It's interesting to compare Clinton's list of substantive economic policy steps to those of his immediate predecessors. George Bush cut his own deal to reduce the budget deficit in 1990, with his own set of spending caps and tax increases. The impact on the deficit was delayed because the recession of 1990-1991

Bush provided a solid economic framework. Clinton reaped the rewards.

led to lower tax payments and higher spending on the social safety net. But the long-term impact of Bush's 1990 deal on the budget deficit was actually larger than the 1993 Clinton package.

The Bush Administration negotiated NAFTA and initiated the talks that led to the WTO. Bush also encouraged the first welfare-to-work initiatives, which were mandated under the Family Support Act of 1988. The Bush Administration dealt aggressively with the collapse of the savings and loan industry. It first pushed for passage of the Financial Institutions Reform, Recovery and Enforcement Act of 1989, which reorganized deposit insurance for the S&Ls and provided $150 billion to pay off depositors. Then, it followed up with the FDIC Improvement Act of 1991, which reorganized banking regulation. Indeed, this latter law made the repeal of Glass-Steagall politically thinkable.

In many ways, the Bush and Clinton economic initiatives were on the same track. The Bush legacy is very similar to Clinton's.

Yes, Bush presided over a recession induced by a combination of higher interest rates and a spike in oil prices during the Gulf War. But I find it hard to blame his Administration for interest rate increases that happened before he took office, or for the imperial ambitions of Saddam Hussein. Bush provided a solid economic framework. Clinton built on that framework and reaped the rewards.

How does the Clinton legacy stack up against Ronald Reagan's? Each led the economy through a long period of growth and stable prices. As noted earlier, productivity growth increased in the 1980's and increased still more in the last few years. But in both cases, the good news had far more to do with private trends, especially the remarkable developments in information and communications technology, than with Presidential leadership.

Reagan does deserve credit for reducing high marginal tax rates and for passing the loophole-closing Tax Reform Act of 1986 in his second term. He also stalwartly backed the Fed's efforts to reduce inflation, even when tight money led to a deep recession early in his first term. The 1988 welfare-to-work legislation passed on his watch. However, Reagan left behind a huge Government debt and chronic budget deficits. Also, even though the Reagan Administration did support the earned-income tax credit, it did little else for low-skilled workers.

All told, comparing the Clinton Administration's economic legacy with the Reagan Administration's comes down to how one weighs the benefits of tax reform and lower marginal tax rates against the lower Government debt and greater advocacy for

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the working poor. It's a closer call than partisans on either side like to admit.

CLINTON'S SINS OF OMISSION

Clinton's greatest economic liabilities are tied not to what he did but to what he hasn't done. For example, it was widely recognized in the early 1990's that Social Security and Medicare could not be sustained indefinitely at the legally mandated levels of taxation and benefits. However, the Clinton Administration has never stood behind a clear vision for reform. Indeed, it has done its share to poison public discussion of the issues.

Back in 1995, the Republican-led Congress proposed sweeping changes to slow growth in Medicare spending. Hard though it is to remember, the auguries for passage of a compromise were favorable. Then came the 1996 election season and, led enthusiastically by Clinton, the Democrats used Medicare as a club to beat the Gingrich crew. It made for good politics but destroyed all vestiges of bipartisanship on this delicate issue. Since then, the Republicans have refused to take the lead on either Medicare or Social Security.

Subsequent discussions of the big entitlement transfers have been dominated by split recommendations from bipartisan commissions. An advisory council was appointed to look at Social Security. But its 1996 report only emphasized the members' deep differences: some wanted to preserve the present system, some wanted to privatize pensions and some wanted to create a hybrid system. The Bipartisan Commission on the Future of Medicare, popularly known as the Breaux Commission, presented an equally divided report in March 1999.

In neither case did the Clinton Administration take a strong position or push for a compromise. Far from it: the President's empty stance as the great defender of Social Security and Medicare has reduced the prospect of reforms anytime soon.

Clinton's efforts also fell short in health care. Today, the number of uninsured Americans and the annual rate of increase in health-care costs look very much as they did when Clinton first took office.

Perhaps the problems of America's health-care system are too deeply rooted for a President to make much difference. But the ham-handed way in which Clinton approached reform in 1994, handing it over to his untested spouse and her old college chum while shutting out both centrist economists and Republicans, was hardly a practical approach.

A third fundamental issue is investment in productivity. When Clinton was elected in 1992, productivity growth had been falling short since the early 1970's. The pace has picked up since the 1980's, thanks to the new developments in information technology. But the Clinton Administration has done relatively little to nourish the renaissance.

This assessment may seem harsh: Clinton can point to the 1993 Deficit Reduction Act, which ultimately took the Government out of the competition for private savings. However, the investment surge of the 1990's has been largely financed with capital from abroad, which implies that a good chunk of the returns will go to foreign investors. America's R&D spending rose from 2.2 percent of GDP in the 1970's to 2.6 percent of GDP in the 1980's, but has stayed at that level since. Finally, while Clinton has talked a lot about improving public education, his impact on schools has been modest at best.

A fourth test of the economic dimension of the Clinton Presidency is less tangible: did he make the public more amenable to globalization? Earlier, I gave the Clinton Administration credit for its support of NAFTA and the WTO. But with time running out in Clin-

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ton's second term, Americans are probably more hostile to trade than they were in 1992. In a poll in late 1998, protectionists outnumbered free-traders by 56 percent to 37 percent.

The protectionist cause has attracted strange bedfellows in recent years, from labor on the left to isolationists on the right to environmentalists and populists from across the political spectrum. The battle of Seattle in December, when the World Trade Organization failed even to set an agenda for further talks, showed that many Americans have come to believe that trade is a foreign plot. Consequently, there has been a crying need for a President who would explain the importance of free trade and stand by it.

Instead, the White House has practiced brinkmanship, threatening allies with sanctions in the name of looking tough, while backing away from actual trade wars. This lent credence to those who believe that "unfair" trade is deeply injurious to America's economy, while further convincing them that nothing will be done about it.

A final test of the Clinton Administration has been its impact on social mobility. Yes, the White House has supported policies to help the working poor. But it is hard to argue that members of the underclass and their children have a markedly better chance to succeed in America's competitive economy than they did back in 1993.

The problems that Bill Clinton failed to ameliorate all predated his Administration, and so it may seem inappropriate to place them on his account. But Bill Clinton entered office without the double-digit inflation and looming recession that Ronald Reagan faced, and without the rising interest rates, recession and S&L meltdown that George Bush confronted. Clinton has benefited from unbroken prosperity, which should have bought him some political space to leave a more important mark on the commonweal.

GOOD FORTUNE AND COMPETENCE

Historians will look back on Clinton as a President who was dealt a great economic hand. He entered office in January 1993 just as the economic recovery was shifting into high gear. He had the good fortune to inherit Alan Greenspan. He inherited a framework for deficit reduction, trade liberalization, welfare reform and banking deregulation that he could build upon.

This good fortune extends to the world arena. On his watch, Japan became a paper tiger and Europe was too preoccupied with its own economic and monetary union to stir the global economic pot. Energy prices, untouched by conflict in the Middle East, have remained relatively stable.

Perhaps Clinton's greatest good fortune has been to reap the fruits of the revolution in information and communications technology. That revolution has not only raised productivity but driven the stock market to levels unimaginable in 1993. And tax revenues from the whopping capital gains of the late 1990's helped balance the budget in double-quick time.

The Clinton Administration has played the economic game competently, and competence should never be belittled. But competence must also not be confused with the situational advantage. Bush was about as competent as Clinton, but confronted harsh challenges. Clinton's economic policy, by contrast, allowed and assisted a good situation to continue – but that is no reason to cast the President as a genius. Nothing in Clinton's economic record reaches beyond competence, which is why it should go down in history as only a notch or two better than ordinary. M

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Government's End

Why Washington Stopped Working

ILLUSTRATIONS BY
FERRUCCIO SARDELLA

Behind almost everything written about public policy is the unstated assumption that a few smart, public-spirited technocrats could fix what the body politic has broken. Jon Rauch, the author of *Government's End* (PublicAffairs), is smart and public-spirited. And no one who reads his column in *National Journal* doubts he is well-versed in policy wonkery. But *Government's End* is hardly another set of marching orders for soldiers of the left and right eager to remake politics and policy. ¶ Indeed, some will take this revision of a book that Rauch wrote in 1994 as a rationalization for abandoning the goal of good government. That would be a big mistake. For Rauch believes that democratic capitalism can survive – even thrive – in the age of political gridlock. But fighting off what he calls "demosclerosis" requires that we abandon the utopianism that inadvertently feeds the cause of special interests. ¶ Read and be inspired: You have nothing to lose but your illusions!

BY JONATHAN RAUCH

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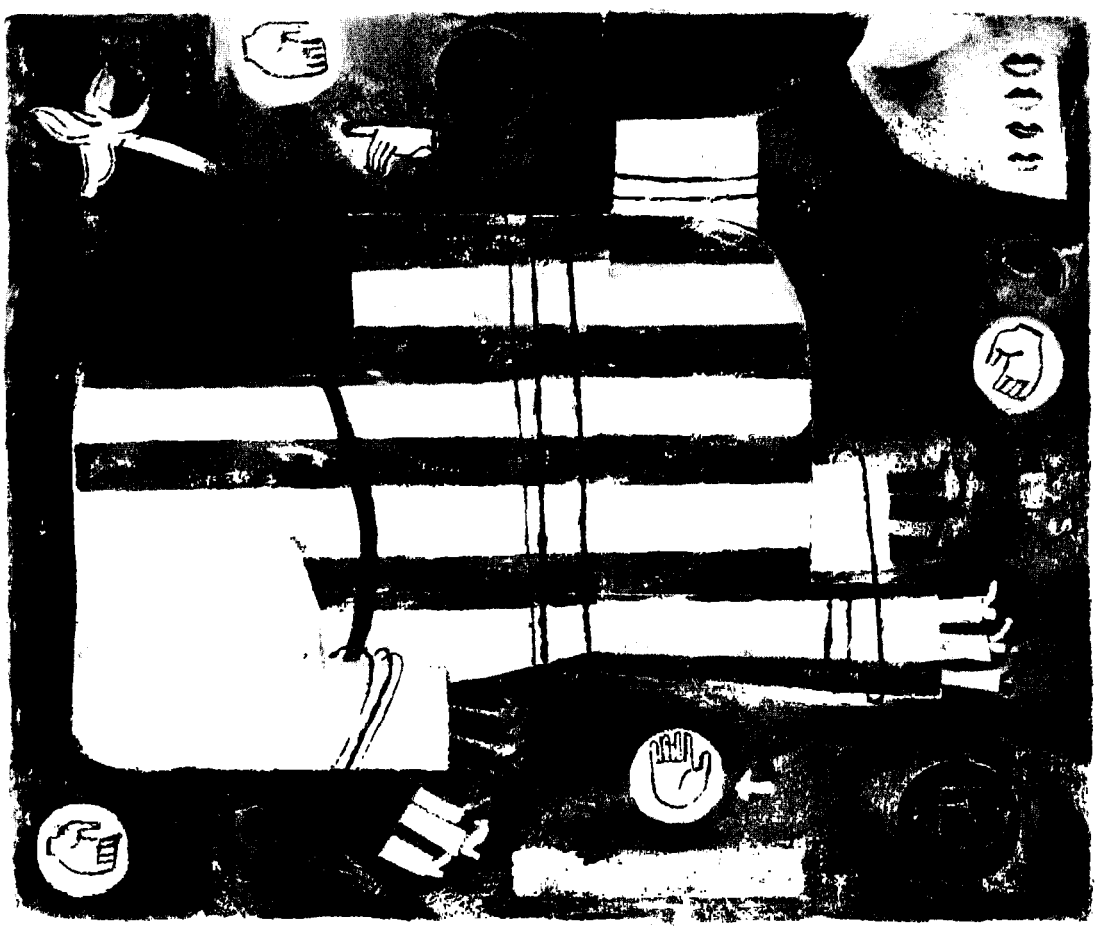
Between the time the results became clear and the moment when the new President-elect emerged to acknowledge his victory, two long hours passed. A crowd of 50,000 stood waiting for their man in front of the Old State House in Little Rock, Ark., shivering in bitterly cold weather that caught people in their shirt-sleeves. Millions elsewhere waited, too. Younger people could barely remember a Democratic Presidency and wondered how the first Democratic President-elect in 16 years would sound. Their elders wondered whether the new man would show that he had learned from his predecessors' mistakes.



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At 11:22 p.m., central time, on Nov. 3, 1992, Bill Clinton finally emerged, looking exhausted but happy. His speech began with the usual thank-yous. Then came what was, in effect, the first substantive statement of the Clinton years. He announced that he would "face problems too long ignored." Then he said, "I think perhaps the most important thing that we understand here in the heartland of Arkansas is the need to reform the political system, to reduce the influence of special interests and give more influence back to the kind of people that are in this crowd tonight."

Campaigning against special interests is a venerable American tradition. Harry Truman cried out from his railway car that his campaign was "a crusade of the people against the special interests." Twenty years earlier, Calvin Coolidge warned his successor, Herbert Hoover, about the interested parties who would be coming to see him. "You have to stand, every day, three or four hours of visitors," Coolidge said. "Nine-tenths of them want something they ought not to have. If you keep dead still, they will run down in three or four minutes. If you even cough or smile, they will start up all over again."

The curious thing is that ever since Coolidge's day, interest-group activity has increased. The more the public complained and the more the politicians promised change, the more the lobbies seemed to thrive. And so the president-elect stood there in 1992, promising more of the same.

Some years earlier, another young politician began a crusade against "special interests." Like Bill Clinton, he set out to transform government into something more forward-looking, more responsive. He was as determined as Bill Clinton and also as bright (which was saying something). His name was David Stockman, and in those years – the mid-1970's – he worked as executive director of the House Republican conference. In 1975, Stockman announced himself to the world with a brilliant and provocative article that opened a new conservative front in the war against big government.

"The vast increase in federal social welfare outlays," Stockman wrote in *The Public Interest* magazine, "has created in its wake a political maintenance system based in no small part on the co-optation and incorporation of Congress itself." Conservatives and liberals alike channeled social spending, not to the people or places that needed it most, but to all 435 congressional districts. The maxims of real-world social spending included "don't close the money sluice no matter how outmoded the program" and – a concise formulation of political utilitarianism – "the greatest goodies for the greatest number." Urban-aid programs and housing programs and education programs had become for the 1970's what dams and bridges had been for the 1930's and 1940's. As a consequence, "what may have been the bright promise of the Great Society has been transformed into a flabby hodgepodge, funded without policy consistency or rigor, that increasingly looks like a great social pork barrel."

Stockman went on to become a Congressman, and Ronald Reagan chose him to be the Administration's budget director. From that post, Stockman became the chief ideologue and strategist for what amounted to the first reformist conservative Administration since the New Deal. As the Reagan Administration began, he said, "We have to show that we are willing to attack powerful clients with weak claims."

What happened was not what Stockman had in mind. "In 1986," he wrote in his angry book *The Triumph of Politics*, "the Federal Government again spent 24 percent of the GNP,

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compared to a pre-1980 norm of about 20 percent. Why? Because the White House has no semblance of a program or political will to spend any less."

At about the same time, however, another reformer stood before a small group of conservative activists and explained how the fight against entrenched Government could yet be won. I happened to be there that night and was fascinated by the peculiar but compelling visitor. Newt Gingrich talked grandly and abstractly and seemed as eccentric as his name. Yet his magnetism was apparent, and his unruly intelligence dazzling. The problem until then, he explained, had been failure to think "outside the box."

In 1995, when he became Speaker of the House, Gingrich was determined to do from Capitol Hill what Stockman had tried to do from the White House. The result, to Gingrich's credit, included two landmark reforms of farm subsidies and welfare. Elsewhere, however, Gingrich's failure was complete. Indeed, for his party it proved catastrophic.

The contours of Gingrich's assault on Washington were different from those of Stockman's, and both differed sharply from Bill Clinton's attempts to change things. Yet the fate of all three was more or less the same. Washington remained much as it had been before. ("Only more so," a wag might add.)

Clinton's fate was, in some respects, the saddest of all. No viable reform movement, conservative or liberal or anything else, remains on the field.

No doubt the future will bring more reformers. Nonetheless, the 20 or so years that began with Ronald Reagan's election shed a cold light on what it is that government's would-be reformers are up against. Change is still easy to promise. But it has grown a good deal harder to deliver. Politicians like Stockman and Clinton and Gingrich cannot hope to keep their promises until they unriddle the paradoxes of a political malady whose perverse dynamics undermine Government.

Why does the "special interest" sector grow year after year, despite the politicians' promises and the public's disgust? Why is it that, despite America's extraordinary wealth and the advent of all kinds of problem-solving technology, the American Government's capacity to solve large problems appears to have diminished sharply since the 1960's?

Why are many liberals and Democrats, with their greater proclivity to use government to right wrongs and correct flaws, paralyzing the very government that they believe they are championing? Why are many conservatives, with their blame-the-liberals rhetoric, actually feeding the "big government" that they constantly decry? Why did three waves of determined reform fail, each more spectacularly than the last?

"The clear mandate of this election," Clinton remarked after winning in 1992, "was an end of politics as usual, an end to the gridlock in Washington, an end to finger-pointing and blame." Alas, his attack on "special interests" was not particularly encouraging, because it implied that the problem was "them." Wrong. The problem is us.

SIGHS AND MOANS

For me, the first inkling that something malign was happening came in February 1985, a few months after I arrived in Washington. Having just left my job with a newspaper in the South to become a reporter for *National Journal*, I wandered into the Senate press gallery and beheld the gangly figure of Alan Simpson. The Wyoming Republican was doing what's known as "holding the floor" while leaders worked behind the scenes on some compromise or other.

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Simpson was complaining about the partisan games that go on in the Capitol. "Out there in the American public," he said, "are people who are watching us go through this, trying to see who can hook the anchor on the Democrats or who can hook the anchor on the Republicans, who look upon that as a childish activity."

Simpson's speech was more than just an oration; it was an outburst. The striking thing about it, besides its candor, was the level of frustration it exposed. At that point, "gridlock" had yet to become a political cliché. But here was rhetoric of stagnation and defeat: "We are frozen in place."

Simpson's complaint seemed to be that groups had become adept at mobilizing fear to achieve political goals. His tone suggested the pain of one who is in a trap and does not understand why he can't get out.

In May 1985, three months after Alan Simpson's speech, a Democratic Representative from Texas, a former banker and high school teacher named Marvin Leath, rose in the House to propose a budget package that would have significantly reduced the deficit. The last provision, a one-year freeze in the cost-of-living increase for Social Security, was especially courageous because a Democrat proposing to dock Social Security was like a hemophiliac volunteering for a sword fight.

"As you could most certainly expect," he said, "conservatives are pointing fingers and telling liberals: 'It's your fault. All the years of massive social and domestic spending are responsible for these deficits. Let's gore your ox, and we can solve the problem.' And just as certainly, as you might also expect, liberals are pointing fingers and telling conservatives: 'It's your fault. These massive defense buildups and these massive tax cuts are responsible for these deficits. Let's gore your ox, and we can solve the problem.'

"The truth is, we all know who is to blame. Democrats and Republicans are to blame. Liberals and conservatives and all in between are to blame. The people are to blame for believing all the garbage they get bombarded with through the mail, raising money from both parties and a thousand special-interest lobbies who circle this Capitol in their Mercedes automobiles after leaving their million-dollar homes in northern Virginia."

Why are many liberals paralyzing the very government that they believe they are championing? Why are many conservatives actually feeding the "big government" that they constantly decry?

Practically everyone admired Leath, who told the truth and stuck his neck out. Practically everyone voted against him, too. His package was defeated, 372 to 56. In 1990, Leath announced that he would not seek reelection. He became a lobbyist.

In 1958, around three-fourths of the people said they trusted the Government in Washington to "do what's right." By about 1980, the trust level had fallen by more than half and, apart from a temporary excursion upward during the Reagan years, it has stayed in the 20 to 30 percent range ever since.

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Two-thirds of Americans, Democrats and Republicans alike, say that the Government creates more problems than it solves. By more than two to one, people say that abuses by the Federal Government are a bigger problem than abuses by big business. Between the early 1950's and the early 1990's, the proportion of people saying that Government wastes "a lot" of their tax money rose from fewer than half to 75 percent. People felt they deserved more, and didn't understand why.

RED HERRINGS

The easiest way to refer to Government's problems is as "special-interest gridlock." That description isn't completely wrong, but it is far enough off target to be badly misleading.

The Government, after all, passes scads of laws and scads more regulations and, by any objective measure, gets a lot done. Even the gridlocked days of George Bush saw passage of the sweeping Clean Air Act, the almost equally sweeping Americans with Disabilities Act, new money for child care and a major highway bill. The number of laws enacted during "gridlock" remained well in line with the post-1970 norm.

The question is not the quantity of activity but how effectively a given amount of activity solves problems. Political activity has become a kind of flailing that creates frenzy but does little good. Wheels spin and gears mesh, but the car goes nowhere or goes everywhere at once or shakes itself to pieces.

The other trouble with the term "special-interest gridlock" is its implication that a few fat cats manipulate the system. The era of the back-room bosses who called the shots is over. The Leath budget was not defeated by any cigar-chomping industrialist, but by a coalition of interests representing virtually everybody. The American Association of Retired Persons alone boasts well over 30 million members. If you add the farmers and veterans and oil workers and all the others whom Simpson mentioned and Leath took on, you see there is no longer anything special about "special interests."

If, however, the interests are no longer special, they are not quite general, either. And here is a puzzle. Conventional wisdom suggests that as more Americans got organized, the claims of competing interests would be mediated in the political process, producing a more balanced result. But the public today is less happy than before, and problems seem less likely to be solved.

It is possible to cook up all kinds of explanations for what went wrong. A standard complaint has been lack of leadership. But there is little evidence that the people are electing poorer leaders. In times of crisis – the debate over whether to authorize war in the Persian Gulf in 1991, for instance – the system still rises to the challenge.

Today's politicians include a few genuine reactionaries, but also activists whose commitment and talent yield nothing to the abolitionists of 150 years ago or the labor left of 50 years ago. If the Government is becoming unable to solve problems, the change has to be on the system level.

Some people, mainly liberals, would say that the public was brainwashed by Ronald Reagan into hating Government, rendering it ineffective. Yet the wave of disgust with Government brought Jimmy Carter into office four years before Reagan.

The growing influence of money in politics is often held up as the problem, but money by itself need not lead to stultification. If the money is wielded by a few powerful interests who agree on what to do, then it greases the skids and things get done. Anyway, blaming money avoids the real question: why is there more money in politics?

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Wheels spin and gears mesh, but the car goes nowhere or goes everywhere at once or shakes itself to pieces.

Some liberals complain that the problem is the power of corporations to block changes in the public interest. There was no lack of corporate influence in the days of Andrew Carnegie and J.P. Morgan, and those magnates were unable to stymie the trustbusters. What is new is the proliferation of nonbusiness activists, many of them representing what they believe to be the public interest. They wielded enough power to push through, for instance, the massive Clean Air Act of 1990, which most corporations would happily have done without.

Still others have blamed recurrent episodes of divided control of the Government. However, Democrats held both branches under Carter and had plenty of problems. Republicans held effective control of both branches in 1981 – and rather than defeating the interest groups, they handed out tax breaks like party favors.

Moreover, a number of countries with parliamentary systems, under which the ruling coalition controls the whole government, have had problems of "special-interest gridlock" comparable to our own. In France, opinion polls show that a record share of the public is dissatisfied with the way the country is being governed. In Japan, decades of single-party control turned Government ministries into special-interest protectorates, so that crucial reforms were blocked to the point of dragging down the entire economy. Whatever has happened does not seem to be wholly peculiar to the American system.

DEEPER CURRENTS

I have come to believe that ad hoc explanations based on personalities or political parties are too superficial to explain what has happened. And I have come to suspect that the conventional wisdom is backward: the worrisome thing is not so much that American society is in the grip of its gridlocked Government but that American Government is swept along in the powerful and broad changes in American society.

Because this book emphasizes the darker side of redistributive Government programs, it may be most congenial to conservatives, who have always resented programs that take money out of some pockets and put it into others. I hope, though, that nonconservatives will also think hard about what follows. To understand Government's debilitation, you don't need to believe that all Government

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programs should be abolished. Far from it. Redistributive programs are in use everywhere, and should be.

Aid to the unemployed provides security against the most bruising trauma of capitalism; aid to the elderly provides security in old age; aid to students opens doors and raises incomes. All of those goals are worthy, and all of those programs serve real social purposes. The problem is understanding and then minimizing the cumulative side effects, which turn out to be both nasty and inherent.

The power of Government to solve problems comes from its ability to reassign resources. But that very ability energizes countless Americans to go digging for gold by lobbying Government. Moreover, as the client groups proliferate and professionalize, Government becomes more difficult to control.

Like the bacterium that mutates to stay ahead of the latest antibiotics, programs change. But they do so in ways that preserve their existence and keep their clients happy, rather than in ways that solve social problems. And as the programs and their protectors adapt, Government reaches a point from which there is no turning back.

That point has arrived. After a 150-year period of relative modesty and quiescence and then a 50-year period of high ambition and rapid expansion, Government has become what it will remain: a large, incoherent mass that is impervious to reform.

That is what I mean by "Government's end." Government has evolved to a steady-state condition from which it cannot be dislodged. What we see now in Washington is basically what we will get for a very long time to come – even though most people wish and vote for something quite different.

This is not necessarily bad. It is certainly not anybody's first choice, but whether it is a crisis or merely a less-than-ideal fact of life depends, like so many other facts of life, on how well we cope. Unfortunately, the political system has had a hard time adjusting, no doubt because reality is so deeply in conflict with the rhetoric of politicians and the expectations of activists.

But the public is growing gradually, if grudgingly, more accepting of the limits on Government's ability to change society. Not even the most liberal Democrats talk anymore of nationalizing industries or guaranteeing incomes for everybody. Beyond that adjustment, however, lies another, which is subtler and harder. The public needs to accept the limits on its ability to change Government.

In spring 1994, this book's predecessor was first published under the title *Demosclerosis.* Shortly thereafter came Clinton's dramatic attempt to overhaul health care, and after that, Gingrich's attempt to overhaul everything. Those events showed that what I call demosclerosis held an even more powerful grip on Washington than I had originally thought. They raised a further question, too: what happens next?

The first version of this book focused on the mechanisms of sclerosis. I've since thought about the lessons of the failed reforms, about the possible routes to doing better and about ways the country can develop a less pathological relationship with its Government.

"Government's end" doesn't mean that change can never occur. It does mean that there are basic facts we need to understand about the malady that grips our Government:

- *It is inherent.* Democracies are necessarily vulnerable to what I call demosclerosis. The problem is encoded in democracy's DNA.
- *It is progressive.* The disease is gradual, but its effect is cumulative. Resisting it requires constant effort and attention.
- *It is cunning.* The syndrome exploits the

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voters' knee-jerk attempts to fight it. It ensnares the unwary in a trap baited with subsidies, and it wraps itself in the language of fairness. It revels in hyperbolic political promises of "revolution" and in rhetorical attacks on "special interests."

- *It is not someone else's fault.* At Government's end, scapegoating ("Liberals did it!" "Business did it!") is obsolete. The problem is not the political group you most despise. The problem is the system, and everyone is deeply implicated.

I am not saying that nothing can be done. I am saying that the voters will continue to be frustrated until they learn how to treat the syndrome rather than just shaking their fists at it. I sketch the sorts of reforms that can be the foundation for a new entente between Washington and the public. Highest on that list are the reforms we must make inside our own heads. America's Government has grown up, and the citizenry can grow up with it.

TOCQUEVILLE'S GHOST

A century and a half ago, Alexis de Tocqueville concluded that democracy's Achilles' heel was tyranny of the majority. "The majority in the United States has immense actual power and a power of opinion which is almost as great," he said. "If freedom is ever lost in America, that will be due to the omnipotence of the majority driving the minorities to desperation and forcing them to appeal to physical force." But democracy has not succumbed to majoritarian tyranny. In fact, America has probably done a better job protecting minorities than any other society in history.

A century after Tocqueville, many people worried that democracy's vulnerability lay in its lack of resolve in the face of totalitarianism. Dictators, after all, could make decisions at will, while democratic institutions dithered. That fear, too, was misplaced. American democracy saw the dictators to their graves. It saw the cold war through in a display of resolve that history can hardly match.

Today it appears that democracy's vulnerability lies closer to home – in the tendency to form ever more groups clamoring for ever more goodies. This drift may represent the most serious challenge to the vitality of democratic Government. One reason democracy didn't succumb to majoritarian tyranny or to the dictators' resolve was that people became worried about both threats and so managed to defeat them. The current threat is more insidious. It is a crisis of collective appetites, one in which well-meaning people interact to produce a stalemate.

ADJUSTING OUR WORLD

"The end of history," wrote Francis Fukuyama in 1989, "will be a very sad time." But the end of Government will not, I think. It may, indeed, be a cheerful, resolute, politically healthy time. Much depends on whether Americans make some changes in their world and whether they make some other changes in themselves.

I often notice how people who take good care of themselves and lead vigorous, engaged lives not only live well but age gracefully. They know that human beings live along time's arrow, but they also understand that a life in which the past cannot be undone is not necessarily a life that gets worse. When they receive their first membership solicitation from the American Association of Retired Persons, they react with a chuckle instead of an anxiety attack.

The analogy between an aging person and an aging democracy is flawed in obvious ways. Human aging stops with death. Democratic Government, however, goes on and on – or so one hopes.

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Still, the analogy is useful. It explains why a proper understanding of a frustrating situation need not lead to despondency. Once you stop banging your head against the wall, you can think better and maybe try a more effective approach.

This book is about time's arrow. Underlying the concept of Government that I grew up with is a picture of the political system as a neutral tool in which Washington reflects the people's desires and changes accordingly. My objective here is to challenge this "time symmetrical" view.

Government, like our bodies, is a complex organism whose internal dynamics flow predominantly one way over time. New activities in Washington stimulate new lobbies, which reduce Government's flexibility. As the groups accumulate, the logic of collective action makes it steadily harder for any leader or coalition to organize broad reform.

The Government's entire past is encoded in the accumulation of subsidies and programs and client groups that define its present. Never again will Washington be small or simple; never again will politicians go about their business unmolested by pressure groups. And never again can the electorate exert more than marginal control over the vast political biosphere Washington has become.

TREATMENT WITHOUT CURE

Begin by giving up on the goal of a cure. If you are fat, it doesn't pay to wait on your sofa for a magic bullet. But that is what the public has been doing with Government. Prodded by voters and encouraged by "outsiders" who hold Government in contempt, politicians trumpet "real change." A Gingrich or a Clinton is elected on expectations that explode, leaving the viscera of reform spattered around the capital.

Although demosclerosis can't be cured, it can be managed. The suggestions that follow – in roughly ascending order of importance – aren't exhaustive. Nor are they mutually exclusive. In fact, they tend to reinforce one another, much as exercise, diet and stress reduction fight heart disease.

FIXING THE PROCESS

For many, it's an article of faith that political reform is the key to revitalizing Government. If Americans can't stop forming interest groups, then at least we can reduce their influence. The three kinds of reform most talked about are tighter limits on lobbying,

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reform of campaign finance and term limits.

Some of these ideas are worth trying. Nonetheless, expectations for process reforms are generally too high – and miss the point. The process isn't the problem; the problem is the problem.

Consider lobbying restrictions. Disclosure rules should be tightened. But impose actual limits on lobbying and you tread on the First Amendment's explicit guarantee of the right "to petition the Government for a redress of grievances." Reduce that right and you compromise democracy itself.

Anyway, as long as seeking Government goodies is a lucrative business, people will invest in it. Reforms of lobbying may force you to use more devious channels. But the ingenious lobbyists whose livelihoods are at stake will always be ahead of the reforms Congress passes.

Though campaign-finance reform is a more promising route than the suppression of lobbying, it faces analogous problems. "I don't think that would affect me one iota," an anonymous "veteran Washington lobbyist" told *National Journal* when asked about one leading campaign reform plan.

Many cleanup proposals would limit political spending, the theory being that money corrupts the system. It's a weak theory. If you restrict the supply of money without reducing the demand, you just force politicians to search more frantically for cash. In fact, that has been the effect of reforms since the 1970's: making money harder to get has made politicians more obsessed with raising it.

Besides, political money is not the main cause of demosclerosis; votes are. You may limit the money that the sugar farmers' lobby can give to a Louisiana Congressman. But that lobby can still deliver the votes of the people in its industry; it can still inundate wavering Congressmen's offices with mail.

The root problem is that the groups with the money represent millions of American voters and are engaging in practices that their members, rightly or wrongly, support. You need to weaken the groups, or else they simply pick up another weapon.

The analogy between an aging person and an aging democracy is flawed in obvious ways. Human aging stops with death. Democratic government, however, goes on and on – or so one hopes.

Advocates of limiting money in politics argue that such reforms can at least make the process more equal. The trouble with this argument is that it's about three decades out of date. Environmentalists, unions, small businesses, veterans and the elderly are not "the rich," and they are all busy lobbying. In fact, it's partly because the fat cats lost control that lobbying has entered its debilitating spiral. Limiting donations may actually tilt the playing field toward the insiders.

Don't get me wrong. Public financing of campaigns might give politicians a respite from the ceaseless search for cash. Disclosure rules for lobbyists and large-dollar political donors let people know who is seeking what goodies and at what cost. But remember that

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changing the money rules can be, at most, a small part of coping.

People who believe the root of the problem is the professional political class suggest another reform: term limits. The idea is to make the Government less beholden to lobbies by reducing politicians' stake in their jobs. Instead of being in business for themselves, the argument goes, politicians would be real people with real lives.

Term limits might weaken the culture of professional politics. Or politicians might enter one office and immediately begin scheming and jockeying for the next. Instead of getting careerists out of politics, term limits might just shorten their attention span.

That is not to say term limits are a bad idea. At bottom, though, the roots of Government's decline lie not in the careerist culture but in the transfer-seeking logic that shapes and drives that culture.

Ultimately, the problem with all the process reforms is that the Government-friendly environment of the mid-20th century is gone forever. There is no repealing the technologies that have made lobbying so cheap and so fast. There is no dismantling the infrastructure of professional subsidy brokers and lobbies.

LOCKING THE CUPBOARD

We Americans organize into lobbies because Government can feed us. So some libertarians and conservatives would solve that problem by putting the food out of reach. That is, they would make the entire transfer-seeking business illegal.

James Madison was aware of the dangers of transfer-seeking. "The sober people of America have seen with regret and indignation that sudden changes and legislative interferences, in cases affecting personal rights, become jobs in the hands of enterprising and influential speculators, and snares to the more industrious and less informed part of the community," Madison wrote in *The Federalist No. 44.*

Madison's idea was that Government should have little power to reassign property. Thus does the Bill of Rights say, "No person shall be deprived of life, liberty, or property without due process of law; nor shall private property be taken for public use without just compensation."

For decades the Supreme Court more or less held to the Madisonian vision. But in the last third of the 19th century, the courts began upholding transfer laws. And during the New Deal, the Supreme Court yielded more ground by blessing President Roosevelt's interventionist economic program. Since then, constitutional restraints on transfer-seeking have been few.

Suppose the situation were like the state of affairs pre-New Deal. If Smith wanted to put a billboard on his property or pave over his wetland, the Government could stop him only by compensating him. Necessarily, then, the Government would have a harder time giving away favors to people who wanted benefits at Smith's expense.

This is the general approach favored by the so-called property-rights movement. It has a big advantage and a big disadvantage. The big advantage is that it would work: no point lobbying a Government that can't do anything for you.

The big disadvantage is that any plan restricting the Government's ability to subsidize merchant mariners would also restrict its ability to run Social Security or to enforce environmental laws. Everything the Government does requires the power to take tax money from one place and put it somewhere else. The dream of turning Leviathan into a mouse is just that – a dream – and its persis-

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tence blocks acceptance of realistic measures. So on to more practical suggestions.

SCATTERING THE GOODIES

One reason Washington is suffocating under the swarm of client groups is that Washington is an irresistible target. It is one-stop shopping for the parasite economy.

If the central Government is so big that it attracts every manner of opportunistic interest, why not decentralize?

Although states and cities aren't immune to sclerosis, far more of them exist. Decentralization means that lobbies need to spread their resources across more governmental units. Just as important, decentralizations offers the possibility that programs would compete with one another. If Hawaii discovers a better kind of health-care program, it would gain an advantage over less effective states. And if, in the end, a local Government does turn sclerotic, people can leave. Meanwhile, if the Federal Government is given less to do, it may do it better.

A thoughtful plan to rearrange responsibilities was proposed in 1992 by Alice M. Rivlin, the director of the Clinton administration's Office of Management and later vice chairman of the Federal Reserve Board. By the 1970's, Washington "resembled a giant conglomerate that has acquired too many different kinds of businesses and cannot coordinate its own activities," she wrote in *Reviving the American Dream.*

Under Rivlin's plan, the Federal Government would be in charge of the health-care system and broad social-insurance programs like Social Security. Washington would cede control of most programs in education, job training, economic development, housing, transportation and social services. "Once clearly in charge," Rivlin argued, "the states would compete vigorously with each other to attract business by offering high-quality education, infrastructure and other services."

Decentralization has been batted around for years; President Eisenhower named a commission to study it, and a decade later President Nixon named another. President Reagan touted a "new federalism." Yet, through it all, nothing happened, except that the Federal Government's bloat grew worse.

No one quite agreed on which functions to strip from the central Government or how to rewrite its charter. Rearranging local and Federal roles is a project that will take decades.

In the meantime, we need measures to manage demosclerosis in the nearer term. So skip ahead – this time to what I think is the most promising class of options. We can't stop each other from forming interest groups and fighting to preserve subsidies. We can't shut activists out of politics. But what if we subject them to forces that soften them up?

CUT THE LOBBIES' LIFELINES

By now, one prescription should be obvious: wherever possible, get rid of things to make room for other things. Cut entire programs loose and pitch them overboard.

Killing low-priority programs strengthens Government by freeing space for innovation. At least as important, it weakens the parasite class by shutting off the money that sustains lobbies. Why is there a sugar lobby? Because there is a sugar subsidy to defend.

Getting the job done requires at least three ingredients. First, there must be leadership from the very top. The President is the one politician with a stronger professional interest in the whole Government and the whole country than in any particular piece of either. Second, determination and realism are essential. You need to come back year after year, never ceasing in the search for opportunities to clean house.

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Third, and not least, you need liberals. As long as the Government keeps doing everything it ever did, it cannot function well and the public will resent it. What the political writer Kevin Phillips once called "reactionary liberalism" – liberals' tendency to cling to every governmental program as though it were their patrimony – has been the death of the American left. To change the political culture so that housecleaning becomes routine, liberals will need to take the lead in scouring for programs to eliminate rather than merely launching the occasional symbolic attack on "corporate welfare."

Reformers should remember that the reason to prune is not to kill Government but to restore its effectiveness. Voters won't believe this if they hear it from right wingers. But they may believe it from liberals.

DOMESTIC PERESTROIKA

Lobbies live to lock money in and competition out. Their fondest love is a monopoly on public funds or private markets. Fruit growers defend rules letting them limit the number of lemons that can be sold. Cable-television companies defend regulations keeping phone companies out of the entertainment-transmission business. Public-school employees and postal workers fend off competition from private providers.

How to weaken them? Competition not only helps make the economy more efficient but also weakens entrenched lobbies. It forces transfer-seekers to sink or swim according to their skill at producing rather than their skill at lobbying.

Domestic perestroika starts with removal of government restraints on competition. Jimmy Carter's deregulation of transportation industries was an antiparasite tonic to match the 1986 tax reform. Deregulation created some turmoil in the marketplace, yet it produced better deals for travelers, greater efficiency in the transportation industry and, for the most part, better service. Air fares fell by more than 20 percent, and the number of passengers doubled, even as accident rates were cut by almost half.

No less important than exposing private interests to competition is exposing Government to competition. Today the public sector, not the private sector, is the biggest haven for monopoly. There are dozens of ways to send overnight mail, but only one way to send a first-class letter. In most places, if you want your household trash collected, you have to pay the Government's rate.

"It is one of the enduring paradoxes of American ideology that we attack private monopolies so fervently but embrace public monopolies so warmly," write David Osborne and Ted Gaebler in *Reinventing Government.* Both produce high prices, poor service, slow innovation and entrenched arrogance. Both breed lobbies whose mission is to see that the coddling never stops.

Wherever possible, then, bring perestroika to the public sector. Force Government providers to compete against private business. The city of Phoenix forced its trash-collection agency to compete with outside bidders, with notable success. Various studies, note Osborne and Gaebler, show that "on average public service delivery is 35 to 95 percent more expensive than contracting, even when the cost of administering the contracts is included."

Bringing competition to Government is no longer a radical idea. By the mid-1990's, at least 15 states had passed laws letting private operators run roads. But allowing competition within Government is no substitute for the kind of public-sector perestroika that counts the most: Government monopolies should be swept away altogether.

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Schools are a good example. The wealthy can flee dysfunctional public schools. The poor are left behind to take their chances in the name of "saving the public schools" – meaning, saving the jobs of the people who run them.

The public-school lobbies argue their monopoly claim on taxpayers' money is in the public interest. But, like so many monopolies, this one serves its holders better than its captives. It resembles other monopolies in its black-hole-like ability to suck in money without noticeably improving performance. Since World War II, spending per student has doubled every 20 years. Yet test scores have fallen and horror stories about what students don't know have became legion. Public schools weren't under pressure to perform, because most of their "customers" – students and parents – could not afford to vote with their feet.

If you hand every parent – or, at the least every lower-income parent – a ticket applicable toward school tuition and say, "Find the best school you can," you force entrenched providers to fight for their paychecks. Breaking the public-school monopoly is not bad for public schools. After the initial shock, competition from Toyota and Honda made American cars better and American car companies stronger. The same would happen to the public schools. It is no coincidence that the strongest and most effective branch of public education, the state university system, is also the branch that competes against private providers. No one seriously believes that competition with Stanford makes Berkeley any worse.

Not every Government agency can be forced into competition. Building three competing private airports in Cincinnati might not work (though, on second thought, it might). Yet the lobby-weakening potential of market-opening is large and still largely untapped. A good rule of thumb: where you see a Government restraint on private competition, look for a way to get rid of it. And where you see a Government agency sheltered from competition, look for a way to expose it.

FOREIGN COMPETITION

Opening a protected niche is very difficult, and success comes sporadically. The forces of stultification, however, operate continuously. Fighting back requires a counterforce capable of weakening entrenched interests day after day, year after year. Foreign competition is just such a counterforce.

The voracious European farm lobby has mercilessly cultivated the parliaments of Europe, eating tens of billions of dollars a year in direct subsidies and much more in indirect costs to European consumers and American farmers. What does this potent lobby fear most? Foreign competition. In the 1990's, as Americans pressed the Europeans to open their agriculture markets, French farmers made their views known by throwing eggs at Cabinet members, dumping produce in town squares, burning American flags and vandalizing a McDonald's.

By taking on the French farmers the Americans do the whole world a favor, but they especially do the French a favor. The Japanese rely so heavily on foreign pressure of this type that they have a word for it: *gaiatsu.* Economic *gaiatsu* is one of the great progressive forces in the world today.

Trade introduces new actors and new technologies, which help keep the economy vital. Just as important, because there is no World Congress to lobby, the job of winning anticompetitive goodies on a worldwide scale is almost impossible. When you expand trade, therefore, you almost automatically weaken local interests.

In this context, the best parasite-weakener

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in the world may be the World Trade Organization. The WTO and the periodic rounds of multilateral trade-opening negotiations that empower it are the most effective form of global *gaiatsu* in operation. The standard arguments for the WTO are economic, but the most important benefits of trade-opening measures are political. By weakening lobbies, trade can help invigorate democratic government – not just in the United States, but all over the world.

That would be impossible if all countries had the same interest groups and the same cozy deals. But they don't. If Europe's farm protectionism is steeper than America's and if America's maritime protectionism is steeper than Europe's, then the Europeans can attack the American shipping interests, the Americans can attack French farmers – and both can attack the Japanese securities cartels. In effect, governments pick off each other's parasites.

The lobbies fight back by wrapping themselves in the flag. When the French farmers blocked the streets and trashed McDonald's, they claimed to be representing France's national heritage. Manufacturers insist that defending their markets (and profits) from foreign "threats" is vital to the national interest, to the technology base, the job base, whatever. Unions insist that foreign competition destroys domestic jobs. Greens protest that competing against dirtier countries undercuts environmental standards at home.

This last argument is worth examination.

Environmentalists worry more about trade than they need to. If you plot countries' environmental records against per capita income, you see that countries become cleaner as they grow richer. There is no historical reason to think that dirtier countries "win" in trade; if they did, it would be hard to account for America's continued economic dominance since the 1970's, when the Environmental Protection Agency opened for business.

Moreover, the discipline of foreign competition keeps environmental rules economically sensible: if you know that Kodak must compete with Fuji, you'll be more careful to reduce Kodak's chemical waste emissions in a relatively efficient way.

The impassioned 1993 debate over the North American Free Trade Agreement brought front and center one of the most common objections to foreign competition – namely, that it reduces employment. Yet imports have more than doubled as a share of the American economy from the early 1970's to the late 1990's, even as the economy added more than 50 million new jobs and the percentage of the population employed rose.

The problem isn't that foreign competition destroys American jobs but that it shifts jobs from one sector to another in ways that sting specific groups. And that, again, is the point: foreign competition hurts entrenched interests. Sympathize with them, help them adjust, but expose them to competition.

Business groups that argue for protection, whether in steel or agriculture, never fail to invoke the threat that foreigners will "take over" some important sector. What they do not say is that protection of one American industry necessarily comes at the expense of others. Protect American car-makers and higher prices hurt thousands of American businesses that buy cars; protect American manufacturers of flat-panel computer displays and higher prices hurt the competitiveness of American computer-makers.

I don't want to oversell foreign competition. Interests that aren't directly involved with trade – veterans or seniors, for instance – aren't much affected by foreign competition. Still, of all the weapons in the arsenal,

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foreign competition may offer the best combination of effectiveness and accessibility. As the tax reform showed, if you scatter parasites only once they soon reassemble. But foreign competition pounds them all the time.

NOT ENOUGH

At this point, after I have put my stack of suggestions on the table, you may feel unsatisfied. On one side, there are powerful ossifying forces that well up from deep within society. On the other is yet another call for free trade.

The complaint, alas, is just. The measures I have discussed are not solutions; they are treatments. A country that follows the path of openness will not be immune to the calcification of Government. But it will slow the process, and in a good year, when America wins a major international trade agreement or scrubs the barnacles from its tax code, the country can recover lost ground.

Now arises a second objection – one that goes deep. I propose to deal with ossification with the very measures that ossification blocks. If we could wave a magic wand and get rid of well-protected programs, this book wouldn't be needed. The lobbies fight subsidy reductions, decentralizing moves, trade liberalization – everything I advocate. How are we supposed to use competition to weaken lobbies when the whole problem is that the lobbies are blocking competition?

David Stockman and Newt Gingrich and Bill Clinton attempted to gather up the whole system in their arms and rearrange it. The right way to fix things is a little bit at a time, steadily, constantly. If you're overweight and have a bad heart, you don't go off to a spa for three weeks and expect to come back a new person. You eat a little better, walk a little more and reduce stress where you can. You don't expect to have the heart or body of a 20-year-old. But you do not view this as failure.

ADJUSTING OURSELVES

People have told me that bullfighting is an exercise in choreographed cruelty, in which what is mainly interesting is the stupidity of the bull. The picadors and toreros stick the beast with darts and jab him with lances, and still he charges to receive more torments.

A British journalist I know, who reported on a bullfight in Mexico, was particularly startled to see how the matador would turn his back on the bull and strut slowly, arrogantly away. But fighting bulls, said this correspondent, "are bred more than anything for surpassing stupidity. While the guy with the sparkly costume and the insufferable airs is swaggering off, bum waving practically in the creature's face, it never once occurs to any bull that this is the time to summon up a bit of strength, lower those horns and transform his tormentor into a swivel chair."

The famous 1974 fight in Zaire between Muhammad Ali and George Foreman was a fight that Ali was supposed to lose. Foreman was nine years younger than Ali, bigger, stronger and fiercer. No one had withstood the elemental force of his punches. As the audience looked on gasping, Ali went to the ropes, covering his face while letting Foreman pummel him with blow after blow and taunting him to punch some more. At length, Foreman was exhausted, punched out. Ali's superior agility could come into play, and Ali took down Foreman in the eighth round.

When I think of the American electorate's spasms of discontent and fury at Government over the last few decades, I sometimes think of that bull. When I think of the ability of all the little transfer-seekers to prevail against headstrong reformers, I think of Ali's rope-a-dope. Every now and then, a matador is gored; and every now and then, the voters

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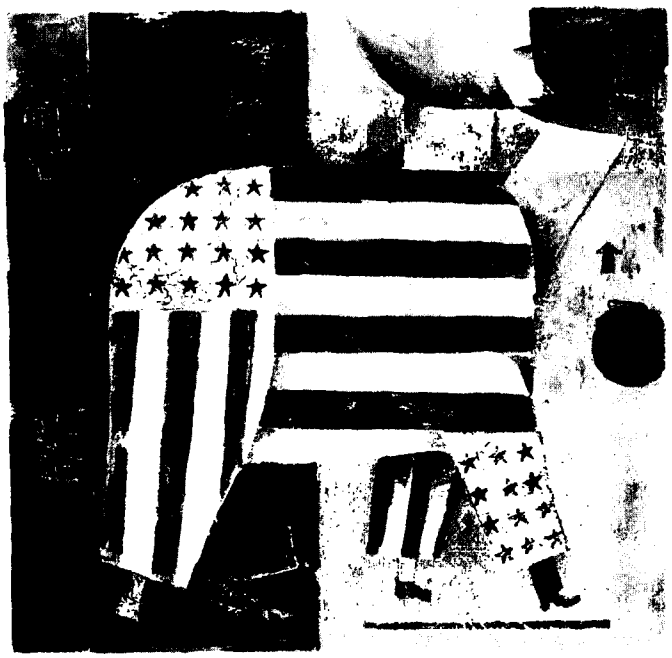

Reformers should remember that the reason to prune is not to kill government but to restore some of its flexibility and effectiveness.

overturn some furniture. But at the end of the day, the bull is still stew, and Washington is still Washington.

If you believe the old civics-book view of the world, then the rise of the transfer-seeking economy represents the triumph of a meddling class standing between the people and their Government. And the mission is to sweep the intermediaries away.

If that is your plan, you may well be as successful as George Foreman or the bull. On the other hand, if you understand the forces that have brought America's Government to its present end, you are likely to realize that the transfer-seekers are no more separable from Government than trees are from a forest.

The future belongs to a governing philosophy that I think of as "radical incrementalism": the determination to foment revolutionary change over a very long time scale. That means looking every day for opportunities to push policies in pro-competitive directions. But it also means accepting Government as it is, replacing immoderate expectations and sporadic reform efforts with moderate expectations and determined incremental change.

WHY LIBERALS AND CONSERVATIVES WILL BE UNHAPPY

As the reality of Government's irreversible (but manageable) sclerosis sinks in, many traditional liberals are bound to squirm. They have long assumed that Washington can do almost anything it puts its mind to, if only the right people are in charge.

I hope I have persuaded you that the liberal assumption is wrong. By initiating programs that create lobbies that lock in programs, Government chokes on its own output. Liberals need to stay aware of the limits on how much Washington can do, and they need to respect those limits.

Some liberals will dismiss sclerosis as conservative cant – more defeatism from the people who have always told us to give up. Another, more common, form of denial is "Yes, but never mind."

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A few weeks before Bill Clinton took office, I met with a Clinton adviser who advocated fistfuls of targeted Federal investment programs and industrial policies (and who went on to play a leading role in the administration's inauspicious health-care reform effort). Demosclerosis implies that it's impossible to insulate such programs from interest groups that capture the benefits and then hoard them. How, I asked, would you get around that problem?

"We have to make this kind of thing work," he shrugged.

Liberals who want to start a new program ought, at least, to design their program with the realities of demosclerosis in mind. That may mean, for example, channeling services through providers who compete with each other for the "business" of the program's end users, rather than running programs through Government bureaucracies or monopoly contractors. It is no coincidence that the GI Bill (education vouchers for veterans) and the food-stamp program (grocery vouchers for the poor) have been so successful.

By a similar token, liberals need to understand sclerosis as a byproduct of Washington's own activities, and not as a product of corporate baddies. Washington is like a town whose factories are poisoning its water supply: at some point, the town needs to stop building new factories and start cleaning up the water. If liberals really care about making Government better, they'll need to see cleaning up the accumulated muck as part and parcel of the liberal agenda, rather than as a concession to conservatism.

Until they do, their hope of using Government in ever more creative ways is self-defeating. Visions of technocratic activism – sharp-eyed Government entrepreneurs making cutting-edge investments, agile officials fine-tuning innovative social programs – are mirages. And those who deny Government's limits invariably make the situation worse.

Government's end thus spells the end not of liberalism but of liberalism without limits. If politicians pick their shots carefully, they can solve a handful of problems pretty well. But if they try to solve every problem at once, they feed the very process that destroys Government's ability to adapt.

Too few liberals understand this. They're loving Government to death – which really means loving liberalism to death, because liberalism relies on Government to solve problems. When Government fails, liberalism fails. And that is the story of the last 20 years.

Conservatives are more comfortable with the notion of limits on what Government can do. But they have some adjusting to do, too. Demosclerosis turns Government into a rambling shambles that often gets in the way but can't be eliminated. And if it fails to serve a liberal agenda, it is equally likely to block a conservative one. Liberals may not get new job-training programs that work, but conservatives can't get rid of archaic regulations.

Conservatives would thus be foolish to think that Government's end is a victory for them. They, too, need to fight it. That means throwing coddled business lobbies into the cold. Above all, it means telling the voters the truth.

For decades, the American conservative movement has been founded on two promises. One of them it kept: Soviet communism was not just contained but defeated. The other promise, however, was to reverse the onslaught of big Government. And that promise was built on an evasion. Conservatives kept saying, "It's those liberals who keep building up Washington!"

What the conservatives did not say was that the average American Government-basher reaps a golden harvest of tax breaks and

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subsidies. "As far as Federal expenditures are concerned," wrote the late Herbert Stein, the chairman of President Nixon's Council of Economic Advisers, the "welfare state for the not-poor is about five times as big as the welfare state for the poor."

Tax breaks and regulatory protections are even more heavily skewed toward the not-poor. By the early 1990's, the former commerce secretary Peter G. Peterson noted, an average household whose income was over $100,000 collected almost twice as much in Government entitlement and tax benefits as did a household earning less than $10,000. If the Government's goal is to equalize incomes, he said, "it would do a better job if it simply scattered all the money by airplane over every population center."

Newt Gingrich's 1994 *Contract with America* was full of poll-tested bromides and bumper-sticker favorites – term limits, balanced-budget amendment, middle-class tax cuts, anticrime measures. What it did not contain was the groundwork for any unpleasant reduction in Government's scope. Ronald Reagan, in his successful 1980 campaign, told the people that smaller Government meant cutting "waste." Even Barry Goldwater flinched. When Goldwater first ran for the Senate in 1952, he described FDR's New Deal and Truman's Fair Deal as "a devilish plan to eventually socialize this country." But he also hastened to reassure his listeners that their favorite transfer programs were secure: "No responsible Republican has any intention or desire to abolish any one of them."

The reluctance of conservatives to sell themselves as the party of pain – the root-canal party – is understandable. Nonetheless, as long as conservatives are unwilling to level with voters, they will remain enablers of the public's addiction to transfers.

Can either side adjust? It's not easy, partly because the conservative and liberal ideologies stymie each other. Conservatives hate to say no to their subsidized friends because they believe liberals will take the money and spend it on big-city mayors. Liberals hate to say yes to program reductions because they believe conservatives will spend the money on tax cuts for the rich. Both sides compete for the affections of a middle class that would just as soon not be told it's part of the problem. So Government stays too big for conservatives and too inflexible for liberals. It neither solves problems nor goes away.

HOW MODERATES CAN HELP

Politicians are always going to overpromise and activists are always going to bite off more than they can chew. That's life. In fact, having some unrealistic reformers around is all to the good, because they generate energy and ideas that over the long haul change the boundaries of the politically possible. Carter's deregulation, Reagan's tax reform, Clinton's welfare reform all began as gleams in the eyes of unrealistic people.

But hope lies less with the activists at either end of the spectrum than with ordinary voters. Those of us who live in the broad middle, and who devote our everyday lives to life rather than to politics, are the ones who bear the real burden of adjustment.

The adjustment begins with mature expectations. If the public is going to reward politicians who chip away at the empire of the entrenched interests, then it will need to appreciate what the politicians manage to do. We should not let blustery rhetoric define what we mean by success.

Radicals promise a new era of popular Government or smaller Government or whatever because they believe it is achievable. Politicians promise new eras because they find it expedient. In 1999, Presidential candi-

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date Lamar Alexander made a habit of promising to "cut federal regulations exactly in half." He named only one regulation to be cut, an Environmental Protection Agency rule having to do with propane storage on farms. The other thousands of regulations to be swept away would presumably be identified after the election. This sort of rhetoric amounts to a blithe denial of what Government is.

At Government's end, success comes in dribs and drabs. The transportation reforms of the 1970's and the tax reform of 1986 and the World Trade Organization agreement of 1993 were all powerful and important antisclerotics. The farm bill of 1996 may prove to be another, and so might last year's reform of the banking laws. But none of those measures could transform Washington into a City of the People. Real-world success does not mean "returning Government to the people," but simply putting additional pressure on particular lobbies at every opportunity.

One or two major programmatic reforms in a decade, plus a drizzle of incremental reforms along the way, seem small potatoes if you're used to politicians' promises. But incremental change on a steady course can be surprisingly powerful. In the mid-1980's, the Federal budget deficit looked intractable. Yet patience and persistence did pay off.

None of the budget agreements made lasting structural changes in the Government. And all were derided at the time – by me, among others – as inadequate. But the increments added up. The moral for smart reformers: at Government's end, the small potatoes are the big potatoes.

WHY A DREAM MUST BE BURIED

The radical incrementalism I'm suggesting amounts to accepting a different and discomforting view of the public's sovereignty. Voters and politicians are not absolute lords of the realm. They are more like kings in the age of Magna Carta, constrained by powerful barons who could be cajoled but not commanded. Washington, we have all grown up being assured, is our servant. We command it! In fact, at Government's end, we must negotiate with it. And if we do not negotiate cleverly, it gets the better of us.

Government's end thus spells the end not of liberalism but of liberalism without limits.

Not so long ago, the promise of American Government seemed boundless if you were anywhere to the left of Barry Goldwater. In practice, of course, Washington still fell short. But most of us assumed that Government, like technology, would improve rather than decline with age.

Even today, many people are unwilling to give up on the idea that Government can be the tool of their dreams. They call upon it to fix low productivity, high hospital bills, teenage pregnancy and cable-television rates. But instead of improving its grip on national problems, it has lost traction. That doesn't mean that Government is dead. It does mean that the Government of our dreams is dead.

This is no disaster. The Social Security checks will still go out, the budget will still be passed (most years), and patchwork reforms will still be approved. When a program goes totally haywire, it will be stopped from exploding altogether. True, the Government

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has become less agile. But that's a prescription for frustration, not death.

In some ways, in fact, death of the dream may be to the good. Americans tend to be obsessed with Government. Liberals hunt for a governmental solution for every problem; conservatives hunt for a governmental cause for every problem. All of them are governmentalists, in the sense that they define their ideologies and social passions in relation to Government. In fact, many people's first impulse is to think that if American Government calcifies, so must American society.

It isn't so. One way or another, social change finds ways to flow around obstacles. Technology and ingenuity work to undercut anachronisms. The Postal Service's monopoly on first-class mail has not stopped the onslaught from fax technology, to say nothing of e-mail and the Internet.

Besides, there are many ways to solve problems besides Government. When General Motors found that its workers couldn't read and add well enough to run a new high-tech plant, it started teaching them. Today, many corporations are delivering education that the public schools are not.

Such ad hoc arrangements may not be ideal, but the point is that Government calcification does not necessarily mean that problems don't get solved. If Government's condition deteriorates instead of stabilizing, we'll just need to think harder about non-governmental ways to solve problems.

ON BEYOND GOVERNMENT

If Washington had to succumb to old age, it could have picked a worse time. Although America's Government is decreasingly flexible and adaptive, America's leading problems are increasingly non-governmental. Strangely, Government's debilities may have the perverse but useful side benefit of forcing Americans to focus less on Washington when our problems have become singularly unresponsive to Federal solutions.

A few years ago, at an embassy party on a sticky summer day, I chatted with a man whom I regard as one of Washington's leading analysts of public policy. We got onto the subject of how his outlook had changed since the 1970's. Even back then, he thought well-designed Government programs might be able to improve social conditions by no more than 40 percent. And today? Probably more on the order of 5 percent.

Although he was well aware of Government's weakening record, he wasn't thinking about Government. He was thinking about a profound change in the nature of the country's problems.

Large, centralized Governments are best at four kinds of missions. First, they can wage or prepare for war – something no other institution can do. Fighting two world wars and then the cold war was easily the Federal Government's most important project in the 20th century, and also its most successful.

Second, Governments can build big national infrastructure projects: one-shot bricks-and-mortar programs that are designed to leave tracks (or roads) on the ground for years. The Federal Government built the interstate highway system, ran the Manhattan Project and flew astronauts to the moon. Insofar as those were focused, do-it-once projects, they succeeded. By contrast, when the Government tried to convert NASA to an ongoing concern without a clear mission, the space program ran into trouble.

Third, although Government is lousy at providing services or manipulating human behavior, it is good at writing checks. Washington set up the basic safety-net programs, like Social Security and unemployment insurance.

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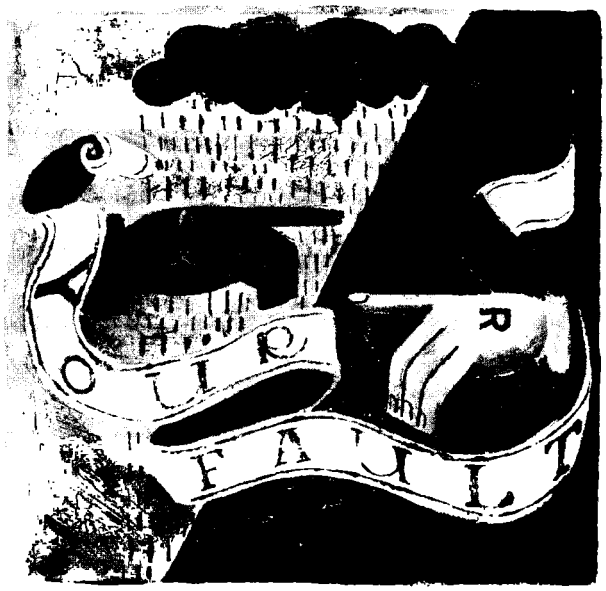

Finally, Government is good at setting minimum standards of political and social freedom. Thus it struck down local barriers to opportunity for blacks, something no other institution could have done.

On balance, Washington did all those things quite well. Then, having done them, it looked at itself and found that it had been transformed, and it looked around and saw that the world, too, had been transformed. Today we meet the result of both transformations: Washington's golden age is over.

Government was transformed partly by its prior successes; it was a victim of its own brand of imperial overstretch. Encouraged by the accomplishments of a relatively flexible Government doing relatively manageable tasks, people began to say things like "If we can send a man to the moon, then by God we can solve [here insert favorite unmet social need]" – as though because Government can do some things well, it can do all things well. People didn't see that a Government adept at mailing Social Security checks is not necessarily adept at running a health-care system. Nor did they see how they might calcify Government by demanding too much from it. That, of course, is the story of demosclerosis.

Meanwhile, however, the world was changing. By the 1990's, America's leading problems related not to the physical infrastructure but to the social infrastructure. American high-school students performed less well than either their parents' generation or their peers in other developed countries. In 1970, one in nine American children lived in a fatherless home; by 1997 more than one in four did. The link between fatherlessness and pathology – poverty, violence, mental illness, poor education – is now beyond denying.

The point is not that these problems are getting worse. Indeed, some of the alarming trends have begun to turn around. Rather, the point is that the nature of the country's most pressing problems changed. Government no doubt had some role in creating these problems; no doubt it must play some role in ameliorating them. But in comparison to family, community, church, school and self, Government is the social institution least well adapted to solving them. Washington can write a check and build a bomb, but divorce and violence are not the kinds of problems the Government can solve with a crash development program.

As I write these words on the doorstep of the new century, America is enjoying a resurgence. The economy has been performing remarkably well; crime rates have declined, although they remain well above the levels of the early 1960's; people are living longer and staying healthier. No doubt the future will bring setbacks. Still, the contrast between the Government's decline and the Republic's vigor serves as a powerful reminder that Government's end is a disappointment, but not a death warrant.

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ON BEYOND BLAME

When he left office in 1981, Jimmy Carter delivered a warning. "We are increasingly drawn to single-issue groups and special-interest organizations to insure that, whatever else happens, our own personal views and our own private interests are protected," he said. "This is a disturbing factor in American political life. It tends to distort our purposes, because the national interest is not always the sum of all our single or special interests."

He was right then, and he is still right. To hope that Americans will desist from joining groups that advance their interests or from voting for politicians who do them favors is neither realistic nor fair. But to hope that they will understand how their activities contribute to their Government's problems – that doesn't seem so crazy. Understanding isn't a solution; it is a big help, though. It can make the political climate more congenial to radical incrementalism by showing people why consistent pressure from the political center can work and why spasmodic "revolutions" from the political extremes so often fail.

The rise of the professional transfer-seeking economy, with its breathtaking ability to mobilize antagonism and neutralize enemies, is, of course, a problem. But behind every transfer-seeking professional is a client saying "Gimme." Generalized voter discontent and inflated political rhetoric about "change" trouble the transfer-seekers not at all. As the people become angrier, the associations and lawyers and lobbyists and politicians tell them: "Hire me to protect you before they rob you blind!"

Blaming some villain for what is in fact a systemic problem is a guarantee that the real problem will not be confronted. Dogs gnaw through fur and flesh to rip out ticks or fleas. So the American body politic flails against the parasite economy, casting votes for politicians who claim to be "outsiders" or who promise to fight the "special interests." Who finances and sustains the parasite economy? Look in the mirror.

A NEW ENTENTE

So the end of Government is not, after all, a sad time. It's sad, I suppose, if you happen to be a liberal idealist or a conservative revolutionary, for whom nothing less than a new dawn will do. For the rest of us, it is a time of maturely diminished expectations combined with maturely persistent ministrations.

That combination, admittedly, isn't an easy balance to strike. One message seems to be: "It's all over. You can never win, so give up." The other message seems to be: "Keep at it! You'll never finish the job, but every little bit helps!" It's fair to wonder: if there can be no promise of final victory, how can anyone sustain enthusiasm for the fight?

I think this sort of mental adjustment is under way. It seemed to begin somewhere around the time the second Republican Revolution flared and burned out. The Washington of the late 1990's was a more jaded but also more realistic place than the Washington of the late 1980's. If you squint, you can just make out the way ahead toward a new entente between the people and their Government – one that deals with Government as it has come to be and as it will remain, rather than as we may wish it were.

After half a century of ballyhooed "new deals" in American political life – the original New Deal and then the Fair Deal and the New Frontier and the Great Society and the Reagan Revolution and the Republican Revolution and whatever else – comes a hush, and then a small voice. It speaks, to those who have the patience and maturity to listen, of what is perhaps the most momentous new deal of all. Call it Real Life.

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Good research on economic policy doesn't grow on trees. (For that matter, rolling stones gather no moss, and stitches in time save nine.) Anyway, if you have a tip on where I can find good research to abstract here – from trees, moss… I don't care – let me know by e-mail (ppassell@milken-inst.org).

HUNGRY? SHUDDUP AND PLAY YOUR VIDEO GAMES.

Increases in an inflation index (like the Consumer Price Index) represent an upper bound on actual increases in the cost of living. That's because consumers adjust to changes in prices by purchasing more of the cheap stuff and less of the expensive stuff. Hence inflation-adjusted measures of income invariably underestimate increases in living standards. And over long periods, these errors mushroom from picayune to bizarre. So what's a body to do?

Dora Costa, an economic historian at MIT, offers a clever way of teasing out the real trend in living standards from conventional data. She assumes that the proportion of income spent on recreation rises along with living standards. This assumption allows her to look back as far as the late 19th century for relevant data. And the results are provocative.

Costa estimates that the share of national income going to having fun has gone up about 2 percent faster per year than per capita income. Indeed, she says that living standards actually rose during the Great Depression for those who managed to keep their jobs. And in the 1970's and 1980's – a period of stagnant wages and rapidly widening income inequality – "living standards were rising twice as fast as conventionally measured." Best yet, the primary beneficiaries were on the low end of the pecking order. [*"American Living Standards: Evidence from Recreational Expenditures," National Bureau of Economic Research Working Paper 7148. Download (free to educators) from www.nber.org/wwp.html.*]

TALK IS CHEAP

So, you're tooling down the Interstate, chewing on a veggie wrap and hoping the truck driver in the right lane knows you're in his blind spot – all while you're dialing the office. Is there something wrong with this picture? In Europe, the safety mavens frown on drinking coffee while driving, let alone calling a restaurant for reservations. And lots of Americans apparently agree: a number of localities are legislating against cell phone use in moving vehicles.

But Robert Hahn of The American Enterprise Institute and Robert Tetlock of Harvard would prefer you not jump on the legislative bandwagon. They compare the costs – the value of

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roughly 200 lives lost annually in accidents related to cell phone use – with the benefits of cell phones in cars. And they come to a startling conclusion: even with very conservative estimates about the value of car phones, cell phones win hands down.

You don't think a life, worth about $5 million according to the technical literature, should be weighed against the convenience of calling home from the road? Hahn and Tetlock are hardly the first to insist that people never put an infinite value on their own lives, because they make trade-offs between income and safety every day. See if they can convince you. [*"The Economics of Regulating Cellular Phones in Vehicles," AEI-Brookings Joint Center on Regulatory Policy, Working Paper 99-9, October 1999. Download free from www.aei.brookings.org.*]

Bootstraps Equality

Does education make people smart and successful? Or do smart, successful people choose to get more education? The answer matters a lot. For one thing, individuals and Government are investing huge amounts in human capital on the assumption that the payoff is high. Perhaps more important, the fairness of our national commitment to equality of opportunity turns on the idea that hard work and initiative are all that is really needed to succeed.

Well, according to Orley Ashenfelter and Cecilia Rouse of Princeton, the meritocrats can relax: the incredibly high return to education found in most studies is not a statistical mirage. Equally important, the payoff to education is just as high at the low end of the income distribution as at the high end. That is, the children of the poor benefit as much or more from schooling as their affluent classmates do.

How do the researchers know? Ashenfelter is an exceptionally clever empiricist whose methodology included gathering data from identical twins living apart – that is, people with identical natural endowments but different socioeconomic environments. Check out this definitive survey article. [*"Schooling, Intelligence and Income in America," Meritocracy and Economic Inequality (Harvard University Press, forthcoming February 2000), edited by Kenneth Arrow and others.*]

SO, IS POKÉMON WORTH THE CARDBOARD IT'S PRINTED ON?

You may be obsessed with IPOs or WEBs, or whatever is tickling the fancy of the rich and wannabe-rich these days. But for the vast majority of speculators – at least the ones who have tired of slot machines and roulette wheels – the games of choice are beer cans, baseball cards, tin toys, French wines, Beanie Babies, stamps from obscure African kleptocracies and the assorted flotsam and jetsam that shows up on eBay.

O.K., so maybe you knew that already. But do you know whether these collectors actually make money – and on what? Economists Benjamin Burton of Lehman Brothers and Joyce Jacobson of Wesleyan University offer some preliminary answers, including some insights on whether collectibles can serve as a hedge against ups and downs in the markets for more conventional (and liquid) investments.

Not to mention some investing arcana. Did you know, for example, that British Rail's big pension fund invested in antiques in the 1970's and 1980's –

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First Sulfur Dioxide, Now Budget Deficits

A common currency makes the most disciplined economy in the European Monetary Union no stronger than the weakest link in the money chain. That's why there is a single central bank to call the shots on monetary policy, and why, under the grandly named "Pact for Stability and Growth," each member-nation must keep its budget deficit under 3 percent of GDP.

But, you say, the member-states differ in their ability – and need – to run deficits, and without independent fiscal policies, individual countries may have no way to fight recession. You're right. Indeed, this drawback explains why many economists were (and still are) skeptical about the practicality of tying, say, the Spanish economy to the fortunes of Germany and the Netherlands.

Alessandra Casella, an economist at Columbia University, offers a novel way around the problem: apply a microeconomic solution to a macroeconomic problem. Specifically, she would ration deficits with "tradable permits," much the way the emission of some air pollutants is now rationed in the United States. Today, individual electric utilities are free to trade the right to emit sulfur from their coal-fired power plants. This virtually guarantees that power plants located where cleaning sulfur from the stacks is cheapest will reduce their emissions the most. And the savings have been incredible.

By the same token, Casella suggests that each member country should be given permits to run up to a 3 percent deficit. If they wanted to run a higher deficit, they would have to buy the right from another member. This way, the aggregate target of a 3 percent deficit for the Monetary Union is sure to be met – and met in ways that do the least damage.

See any holes in the argument? Of course you do. But read Casella's proposal before you dismiss it out of hand. [*"Tradable Deficit Permits: Efficient Implementation of the Stability Pact in the European Monetary Union," Economic Policy, October 1999.*]

and ended up with an average annual return of 14 percent when the fund was liquidated in 1994? Or that long-term investments in Stradivarius violins have provided paltry rewards? Who ever said economics has to be dull? [*"Measuring Returns on Investments in Collectibles," Journal of Economic Perspectives, Fall 1999.*]

PENNY CAPITALISM

Do the development bureaucrats know best?

Even a decade ago, the World Bank never thought twice about investing a billion here, a billion there, without asking what their impoverished clients really wanted. Now the wheel of fashion has turned 180 degrees. "Microfinance" – small, grassroots loans to finance an irrigation pump here, a sewing machine there – is all the rage. The political left likes it for all the obvious reasons. And the right welcomes it as the saboteur of big government and central planning.

But does it work? Jonathan Murdoch of Princeton University is of two minds.

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There are plenty of tantalizing success stories, but relatively little hard evidence, he writes. Murdoch worries that microfinance programs depend on strong local leadership, and are thus hard to scale up to the level that makes a major difference. [*"The Microfinance Promise," Journal of Economic Literature, December 1999.*]

WITH A LITTLE HELP FROM THEIR FRIENDS

Ready to think big? Jakob Svennson of the World Bank takes a fresh look at a grand, if hoary, question: does foreign aid stimulate economic growth? Back in the 1960's, the skeptics were branded as unfeeling reactionaries ready to let the wretched of the earth starve. By the early 1980's, though, the worm had turned full circle. It had become conventional wisdom that aid worked like welfare checks, undermining initiative and trapping societies in a culture of poverty.

Svennson finds a middle ground. He hypothesizes that aid works only when governments can't steal it outright or slurp up the surplus in patronage jobs – that is, when there are significant institutional checks on government power. And in his statistical test, using aid data from some 100 recipient countries, the results are quite robust.

There's an irony here, though. Donors, almost all of which are democracies with strong restrictions on government power, show no particular inclination to channel their cash to like-minded countries, because the goals of aid are typically geopolitical rather than humanitarian. After all, America doesn't pay the bills in Egypt and Pakistan because those countries are so well equipped to spend the aid wisely. [*"Aid, Growth and Democracy," Economics and Politics, November 1999.*]

— Peter Passell

Europe, the Agricultural Museum

Economists have been railing against Europe's common agricultural policy for as long as there's been a common agricultural policy. No wonder. It costs European consumers a bundle in subsidies and artificially high prices, and it depresses the prices that more efficient farmers from other continents get in world export markets. Oh yes: did we mention that it immensely complicates the problem of integrating big food producers like Poland and Hungary into the European Union? And that it reduces Europe's bargaining power in fighting for open markets in Asia and North America?

The policy, backed by furious French farmers and nostalgic European urbanites, isn't going to disappear soon. Indeed, European intransigence on the issue, added to America's intransigence on other issues, virtually guaranteed that the Seattle meetings of the World Trade Organization would crash and burn even if the demonstrators stayed home. But Stefan Tangermann of the Institute of Agricultural Economics at the University of Gottingen offers modest hope that reforms are still possible in our lifetime. Read his piece for the latest on both how the policy works in practice and how Europe may yet beat its way out of this wretched dead end. [*"Europe's Agricultural Policies and the Millennium Round," The World Economy, December* 1999.]

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So, what do the economics of biotech industry location and the political economy of why badly run countries remain badly run have to do with each other? Nothing, except the fact that Milken Institute scholars are interested in both subjects. Check out their latest and greatest musings on the topics.

Biotechnology and Bioscience

BY ROSS DEVOL

THE BIOTECHNOLOGY AND BIOSCIENCE industries are on the cusp of significant breakthroughs in decoding genetic structures, understanding cellular processes, aiding diagnosis of a wide array of diseases, and creating treatments for diseases. The timing of these advances is especially fortuitous for the baby boom generation, which is rapidly approaching the high-risk age for cancer, cardiovascular diseases and brain disorders such as Alzheimer's and Parkinson's.

Seniors, who represent 15 percent of the population today, already purchase one-third of all prescription medications dispensed in the United States and will account for 30 percent of the population in a decade. Even more dramatic aging patterns are transforming Japan and Western Europe, feeding an explosion in the world's elderly. The total over-65 population will expand from about 550 million today to over one billion in 2020. The major biotech and pharmaceuticals firms recognize the potential returns that these changing demographics imply, and are investing in research accordingly.

Biotechnology and bioscience thus have the potential to mean to the first half of the 21st century what information technology meant to the second half of the 20th. Indeed, we are likely to see a fusing of information technology and biotechnology/bioscience into a powerful economic force. The computer is being applied to decipher and manage the vast genetic information that will play a major role in the global economy. Of course, there is growing resistance to bioengineered foods and animals. This is an ongoing battle that might slow, but certainly cannot block,

STEPHEN FERRY/REMI BENALI/LIFE MAGAZINE/DIGITALLY ASSEMBLED PHOTO BY STEVE WALKOWIAK/LIAISON AGENCY

ROSS DEVOL is director of regional studies at The Milken Institute.

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significant advancements by the army of researchers engaged in the industry.

A BRIEF DEFINITION AND HISTORY

To analyze the biotechnology and bioscience industries, one must first define them. Bioscience is the broader term, incorporating biotechnology and other life science industries, commercialization in the private sector and development of related medical devices, instruments and software. Biotechnology concerns the processes through which living organisms are modified to create products with industrial applications.

The concepts are not new. Humans learned long ago that they could selectively breed livestock, transform sugars into alcohol and convert milk into cheese. During World War II, factory-produced penicillin reduced deaths from infectious diseases and lessened human suffering. But the modern biotechnology industry dates from the seminal research of biologists James Watson and Francis Crick, who in 1953 mapped the chemical structure of the DNA molecule. Over the next 20 years, biologists developed the molecular tools that would allow isolation, replication and alteration of DNA.

The true biotechnology age, however, began in 1973, when Stanley Cohen of Stanford and Herbert Boyer of the University of California at San Francisco collaborated to combine DNA from different life forms to give birth to the first recombinant DNA organism. Just three years later, Boyer and venture capitalist Robert Swanson founded Genentech, which became a pioneer in developing and marketing products, unveiling its first product based on recombinant DNA technology in 1977. An important milestone for the industry was the 1980 Supreme Court decision that genetically altered life forms could be patented. That pulled investment capital into the industry and spurred rapid growth.

The next major biotechnology era was initiated in 1990 with the Human Genome Project, a research effort designed to map life from its smallest building blocks. Although international in scope, it has largely been staffed by Americans. Indeed, in many respects, this is the most ambitious project that Washington has undertaken since the space program of the 1960's. The project seeks to map and sequence the three billion base pairs of human DNA and to identify the approximately 100,000 genes that comprise the human genome, at a cost of about $13 billion. Thanks to rapid advances in computer technology, the process should be completed by the end of 2001 rather than the original scheduled completion date of 2005.

CURRENT INDUSTRY STATUS

More than 80 biotechnology drugs and vaccines have been approved by the Food and Drug Administration. They include Immunex's Enbrel for rheumatoid arthritis, Biogen's Avonex for multiple sclerosis, Centocor's ReoPro for heart attack and stroke, and Amgen's Epogen red-blood-cell stimulant. There are more than 350 biotechnology drugs and vaccines undergoing human clinical trials and hundreds more in earlier stages of development. Some 1,300 firms in the United States are in the biotech business. Most are small: two-thirds employ fewer than 135 people and only one-fifth are publicly owned.

Biotechnology has given us less expensive and more accurate tests for a wide array of diseases, as well as consumer diagnostics such as home pregnancy test kits. And while they face a political backlash, genetically engineered seeds, crops and biopesticides are

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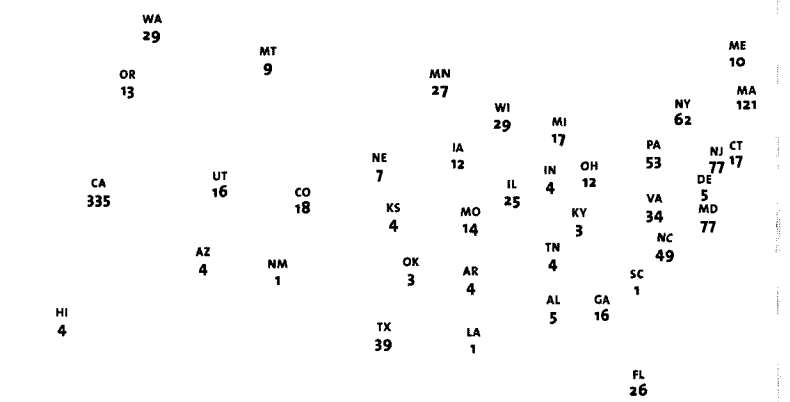
increasing agricultural productivity. Biotech products are reducing the cost of water purification and hazardous waste disposal. Even crime-solving is benefiting from cheaper, faster and more accurate DNA testing.

One of the hottest areas attracting new talent is bioinformatics, the application of information technology to genetics and molecular biology. Mapping the human genome is the first step; the real action will be in scouring the data for small genetic variations using computers and sophisticated new software. Human clinical trials may become less critical as software simulates biochemical reactions within the body.

BIOTECHNOLOGY COMPANIES IN THE UNITED STATES (1998)



Better drugs involve more complex molecules that pose greater difficulty in getting to where they will do the most good. We can envision development of a range of innovative means of improved drug delivery (everything from ultrasound and electricity to micro-machine implants). A wristwatch may even monitor blood sugar in diabetics, and deliver small, continuous doses of insulin.

CLUSTERS' POSITIONING FOR FUTURE GROWTH

Although discoveries in biotechnology/bioscience will benefit the entire human race, there is a different kind of race under way – one to determine where the new industries will cluster. The economic consequences will likely be immense. For the biotechnology industry is among the most research-intensive sectors in the economy, seeding its future discoveries by investing more than half its revenues – some $10 billion – in 1998. The top five biotech firms invested an average of $120,000 per employee on research and development, while the leading pharmaceuticals firms spent $30,000 per employee. Thus, the pool of high-paying, equity-owning knowledge workers that those industries will attract, and the supplier infrastructure that develops around them, promise significant wealth creation for the winning regions.

This new cluster race has many regional entries around the United States. San Francisco and the Bay Area, Los Angeles, Orange County, and San Diego are generally listed among the leading aspirants. Other regions in the running include Boston, the Research Triangle area of North Carolina, Austin, and central New Jersey.

Even though biotech is a young industry, an increasing number of firms are reaching maturity. The factors that determine where biotechnology and bioscience firms are spawned, in contrast to where they grow into

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adulthood, would seem to be quite different. Indeed, making this distinction is critical when evaluating the attractions of competing biotechnology/bioscience clusters.

Biotechnology is research-intensive, with a long payback period for return on investment. And it is no coincidence that biotechnology and bioscience firms are heavily concentrated in regions with top research centers. By the same token, it is no secret that venture capitalists don't like to fly. So financing generally comes from nearby.

Early financing is critical for young "gazelle" firms, because sophisticated research facilities are very expensive. High-end scientists are critical, but gazelles also need a deep pool of management and operational talent. And quality of life matters a lot in attracting the gold-collar workers those firms require.

BIOTECH LOCATION FACTORS (Rank of Top Regions*)

	RESOURCE INFRASTRUCTURE**	OPERATIONAL SUSTAINABILITY***
Austin, TX	8	2
Bay Area, CA	3	5
Boston, MA	1	6
Los Angeles/ Orange County, CA	5	7
Princeton, NJ	7	4
Research Triangle Park, NC	6	1
San Diego, CA	4	3
San Francisco, CA	2	8

* Regions ranked based on mean factor score 1 to 8, 1 being highest and 8 being lowest.

** Resource Infrastructure factors include: Quality of Local Research, Accessibility to Financing, Quality of Labor Pool, Quality of Life, and Infrastructure.

***Operational Sustainability factors include: Availability of Land for Research and Clinical Trials, Availability of Land for Manufacturing, Tax Incentives, Operating Costs, Permitting Process, Health and Environmental Regulations, and Animal Testing Regulations.

Source: A.T. Kearney Inc.

Mature biotechnology firms focus more on clinical testing and production and less on research. That causes them to adjust their thinking on the optimal location. High-tech manufacturing depends on land availability and the ease of getting building and operating permits for the factories. But biotech clusters are usually in high-growth regions, where production costs are high. Moreover, local support for the animal-based testing some of those firms perform may not be forthcoming in areas that hardly lack job opportunities.

A recent study by management consulting firm A.T. Kearney sheds some light on what matters in site selection. Kearney polled senior executives at some 40 biotechnology, pharmaceuticals and medical-device companies, asking them to rate 8 regions on 12 site-selection criteria. As shown in the accompanying tables, the 12 factors were aggregated into two major categories: "resource infrastructure" – the people and institutions needed to conduct business – and operational sustainability.

The study found that young firms weigh resource infrastructure heavily, while maturing companies look to the nuts-and-bolts issues of production. And the results suggest that the regions with an edge will be those that do well in both broad criteria.

Boston appeals to young companies, ranking first in four out of the five resource infrastructure components. San Francisco is second and the rest of the Bay Area is third.

In addition to its world-class research institutions and a highly skilled labor pool, biotech firms in Boston face a friendly government. Massachusetts' program for technology transfer is among the best in helping academics commercialize their research. Massachusetts has also been at the forefront in creating extensive public venture-capital funds for early-stage financing. Boston also

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achieves high scores on business assistance and mentoring of its fledgling firms through its biotechnology incubators.

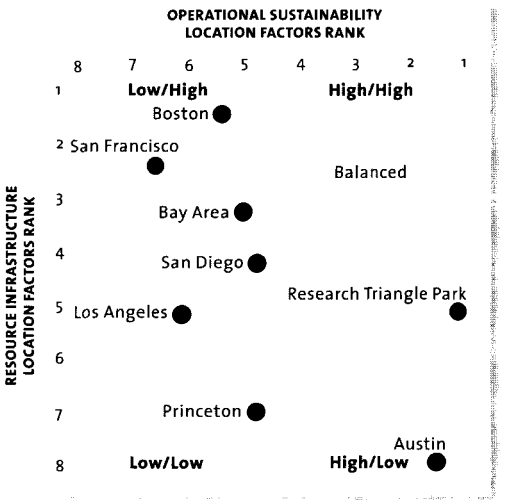
The Research Triangle area of North Carolina is most attractive to maturing firms, scoring highest in five out of the seven criteria for sustaining operations. Cheap land, combined with business-friendly zoning and assistance with infrastructure, make it relatively easy to launch manufacturing operations. North Carolina has zoned three times more land for manufacturing than for lab space. At the other extreme, San Francisco has zoned more than eight times as much land for lab space as for bio manufacturing.

North Carolina has also offered tax incentives to decrease production costs and provided state funding for training a biotechnology manufacturing labor force. Austin ranks second on operational sustainability, scoring first on public policy toward animal research and speed in granting licensing and building permits. San Diego is a strong third on operational sustainability. Boston slips to sixth place in that category, and San Francisco is eighth.

San Diego achieves the best balance between factors important to young and maturing companies, although no region provides the balance that the industry desires. Boston, San Francisco and the Bay Area appeal to young companies, but don't suit maturing ones. The Research Triangle and Austin have the opposite problem.

Why does balance matter so much? If you develop young firms, but lose them when they mature, some other region gets the wealth. On the other hand, if you excel only in biotechnology manufacturing, you will not attract the highly skilled and highly compensated scientists and researchers who provide a large multiplier impact on a regional economy.

BIOTECHNOLOGY REGIONS ARE UNBALANCED



Hilton Root Explains It All to You

BY HENRI LEPAGE

THIS INTERVIEW OF HILTON ROOT, the acting director of global studies at the Milken Institute, was conducted by Henri Lepage of the University of Paris IX-Dauphine and translated by Nancy J. Overholt of the University of California at Santa Barbara. An expanded version appeared in the French periodical *Politique Internationale.*

HENRI LEPAGE: *The book you are editing with Bruce Bueno de Mesquita,* Governing for Prosperity *[Yale University Press], analyzes the institutional conditions needed for economic development. What is the message you want to get across?*

HILTON ROOT: That there is no longer any fundamental disagreement about the means by which economic development occurs: the remaining hurdles slowing growth are essentially political.

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HL: *Have we actually solved the riddle of economic development? If so, why are there still so many failures?*

HR: Until the 1980's, reasonable people could claim that the path to development could be achieved through collective means. It was not unusual to believe in central planning over blind market forces. Today, there is scarcely anyone who would disagree; the countries that chose a centrally planned approach have all gone bankrupt. Economists are now largely in accord about the basic building blocks of development. And few people claim that the advantages of capitalism can be obtained without the institutions that underpin it – private property, competition, the rule of law.

HL: *Except, of course, in France, where the consensus in favor of the market found among Anglo-Saxon economists – indeed, among most of our European neighbors – is far from being unanimous.*

HR: The historical record speaks for itself. We know that the absence of natural resources does not impede growth – the rise of the Asian Tigers demonstrates this. And the subsequent emergence of the Southeast Asian economies shows that economic failures can no longer be explained by so-called cultural biases. Finally, these countries illustrate the importance of what economists call human capital – investment in education.

The Asian experience also illustrates that in order for there to be growth, benefits must be shared in a way that society judges equitable. Stable growth can happen only when there is political consensus. The exterior threat from China was a big help, forcing East Asians to put aside their differences about distribution and to focus on the means to put into place a society focused on economic growth. But the Communist risk disappeared and Asian societies are now more divided.

HL: *If economists are mainly in agreement, how is it that economic inequality continues to grow? How can you explain that humanity continues to fight hunger, poverty and sickness?*

HR: We can no longer treat these tragedies as natural evils beyond the reach of human influence. Nor can we treat them as the result of our ignorance concerning the mechanisms of economic growth. The huge differences in growth rates are clearly the consequence of whether political institutions support or undermine economic freedom.

HL: *The key to success depends not so much on the knowledge of economists as it does on our understanding of the ways political institutions order individual incentives?*

HR: Exactly. We must stop representing the state as the product of some mythic general good pursued by people who, even when they are misguided, have nothing but disinterested service to their citizens in mind. In both democracies and authoritarian regimes, all political decision-making is driven by the personal incentives of those in power. Certain institutional arrangements lead officials to make good decisions; others encourage them to become predators. We are trying to identify not just the economic solutions to poverty but also the political solutions.

HL: *Can you give us a concrete application of your approach?*

HR: The Asian crisis. Many are persuaded that the principal cause was hot money – excessive movement of capital across national boundaries. So the news media are generally favorable to the reintroduction of currency controls. Economists know that the crisis originated in the persistence of mercantilist and

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corporatist policies that, in a world with a free flow of capital, made a meltdown inevitable.

Go back a step. There's a link between the policies and the authoritarian nature of these countries. Without a civil society, the survival of political leaders is based less on the satisfaction of the greatest number than on the use of the state's power to direct the spoils of growth toward groups whose support keeps the leader on top. In societies with democratic governments, politicians can maintain their hold on power only by building large coalitions – which limits their ability to use state structures to distribute favors. Democracy is thus more likely to support growth, since the gains from individual initiative are protected by the state.

For some time before the crisis, it was evident that Asia was going to hit the wall. But even if they knew of the danger, the reigning leaders, democratic and autocratic alike, could do nothing; they would have had to agree to reforms that deprived them of financial control, which was critical to maintaining political power. Since the crisis, these countries have still been reluctant to open their financial systems because political power is grounded in financial power.

The crisis is not limited to the economy. What has happened is both more serious and more profound: Asian societies haven't adapted to conditions for durable growth in a world of free markets, a situation that, for the historian that I am, recalls the contradictions that led to the French Revolution.

HL: *You say there is no longer any doubt about the universality of market-based solutions. Yet recent history gives us several counterexamples: Start with Russia.*
HR: This "counterexample" is, in fact, not one. The Russians have tried to build a capitalist society. But they have preserved many of the institutions of central planning. An omnipresent state still exists, whose propensity for predatory taxation and capricious regulation is a disincentive to growth. Since the owners of privatized firms have uncertain property rights, they plunder, rather than invest in, the companies they control.

HL: *How about the IMF's "structural adjustment" programs? They are examples of liberal economic orthodoxy that have failed to bring about growth to a number of countries.*
HR: It's not enough to introduce a macroeconomic policy that is well designed if the institutions in place do not generate good choices.

HL: *What does this entail?*
HR: Increasing the legal and political constraints that guarantee the sanctity of private contracts; guaranteeing citizens that the state will respect its own contracts; creating a fiscal system that collects taxes in a transparent manner based on clear principles. This may appear rather simple. But macroeconomists tend to forget the malevolent capacity of the state in the third world. Without institutional changes, good macro policies will be in vain.

HL: *How do you explain the institutional weaknesses that led to the East Asian crisis?*
HR: Take Korea. Its growth was anchored on a mercantilist strategy in which the state controlled all financing and distributed credit to companies that appeared to have the most dynamic export strategy. That concentrated economic and financial power in the hands of a few large conglomerates – the chaebols – that collaborated closely with the administration.

It is never good for decisions concerning the allocation of capital to come from a closed group, acting in concert. It is not good for either democracy or the economy. When 15

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families control practically all the capital in a country – as in Indonesia, the Philippines and Thailand – it is difficult to have rule by law. It is difficult to have effective laws when those who control the capital can buy judges and politicians. The powerful take what is available and leave only crumbs for other businesses. Capital is thus rarely used most efficiently. And the banking system remains ignorant of modern risk-management techniques: why make the effort to learn when it will not be the banker who chooses the portfolio?

HL: *What is the solution?*

HR: The prerequisite to stable growth is the destruction of industrial and financial oligarchies, accompanied by the development of stock and bond markets and supported by a gamut of banking and financial institutions. When these countries have competitive capital markets, with stockholders who demand results, the problem will solve itself. Competition – at first from foreign firms, which are more efficient – will compel domestic firms and banks in these countries to align their accounting practices with the modern norms. For this reason, it is most important that borders be opened to global financial institutions. It is still very difficult for a foreigner to buy a bank in Korea – and difficult for anyone to introduce a new financial product.

HL: *You believe in the virtues of general competition in banking when the media and politicians see it as a destabilizing force. What do you expect to get from more competition?*

HR: More transparency in accounting, greater expertise in lending decisions, a better understanding of risk – and thus, more efficient intermediation between investment and savings; better returns on assets; reduced market instability; stronger, more regular growth.

HL: *A fashionable idea is that achieving this goal would require the establishment of a worldwide super-administration.*

HR: A super-government would only bring about a super-disaster. What is needed is the sort of decentralization driven by the Internet.

HL: *Are Asian countries willing to follow this path of decentralization?*

HR: The new South Korean president, Kim Dae Jung, certainly understands the problem. He has promised to break the iron triangle that links government, finance and big business, and a majority of Koreans are behind him. But he is only the head of a minority party in a new democracy, whose institutions retain the influence of martial law. Moreover, reforms will be effective only if Koreans introduce more flexibility in their employment practices – and unions do not want to hear of that.

South Korea, a prisoner of contradictory interests, lacking a democratic culture mature enough to settle interest-group conflict through compromise, deprived of the unifying influence of a credible Communist menace, faces a double blockage – both political and institutional. And with few exceptions, the situations of other countries victimized by the financial crisis of 1997 are identical.

HL: *How do you explain in retrospect the remarkable success of these nations in the last 20 years?*

HR: Today's impasse is an outcome of the peculiar institutions of Asian capitalism. Whatever cultural virtues they possess, Confucian or other, it would not have mattered. Nevertheless, we must recognize that

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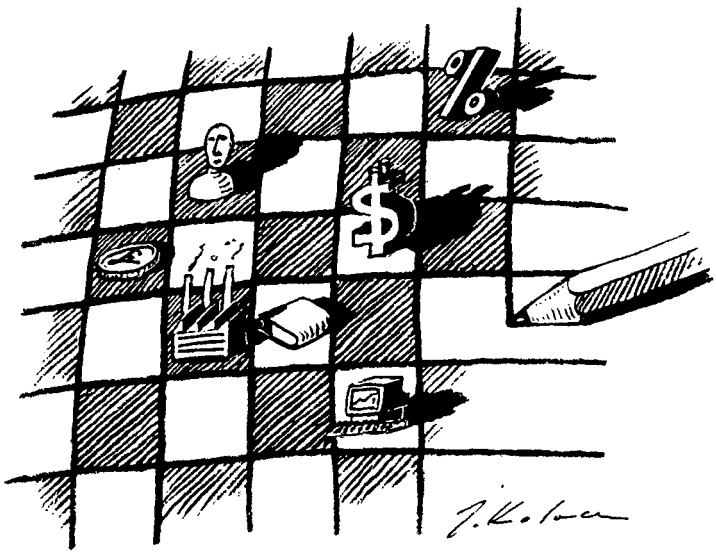
the system worked well for the people of that region for 20 years. The Asian model of development had three winning cards:

- A high-quality civil service. The absence of a rule of law was counterbalanced by a professional cadre of economic advisers: a bureaucracy copied from Japanese law, which was in turn inspired by the German civil service. For a very long time, the result was economic management that was adequately independent from moneyed powers.
- The use of the bounty of growth to create a social consensus in support of economic development. In exchange for the promise of social peace (relatively easy to obtain in times of Communist menace), the state made huge investments in education, housing and health. Governments fostered the feeling that citizens really benefited in the construction of the economy.
- Investments in human capital and low tax rates allowed individuals to cash in on their own productivity. The climate in the Asian Tigers is very different from that of India, Vietnam or Algeria – countries where professional competence does not insure social mobility and confiscatory taxes undermine incentives for self-improvement. This is why savings rates are so high in the Asian Tigers, why everyone sacrifices today in order to benefit later. But the Asian growth strategy led to a fatal concentration of financial power. The Asian miracle is over, and the model that launched these economies must be significantly reformed.



JERZY KOLASCZ

HL: *Will they come out of it?*

HR: The historian in me observes that even severe economic crises rarely yield the needed institutional change. It is only at the edge of the abyss, when events degenerate into open political crisis, that leaders settle down to reform. But it is often too late. That is why France at the end of the 18th century was unable to save itself from a bloody revolution.

HL: *One last question. Can you explain why, over the past 10 years, a gulf has developed between America and old Europe?*

HR: America has just taken a big lead by promoting the democratization of capital. This is supported by two interdependent elements: on the one hand, the wide distribution of equity ownership – 40 percent of Americans own stock – and, on the other, the decline of banks and the enhanced role of securitized credit markets, which more effectively link borrowers with savers.

This is a largely unnoticed revolution. The growth of capital markets helps democratize and decentralize risks, which gives the United States an edge in efficiency. And with so many citizens owning equity, politicians are under pressure to produce economic policies that generate growth. M

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TECHNOLOGY TO DOMINATE GLOBAL CONFERENCE

The third annual Milken Institute Global Conference, to be held March 8-10, 2000, in Los Angeles, will focus on technology. More than 100 leaders from business, finance, academia, public policy and the media are expected to speak at the event, including nine Nobel Laureates in Economics. Michael Milken, the Institute's chairman, will give the conference's keynote address.

Others scheduled to appear include Martin Baily, chairman of the President's Council of Economic Advisers; Boris Berezovsky, a member of the Russian Parliament; Leonard Riggio, the CEO of Barnes & Noble; Joseph Stiglitz, former chief economist of the World Bank, and Jay Walker, founder and vice chairman of Priceline.com.

This year's conference is the biggest yet, with 27 panels on subjects ranging from e-commerce to health care to the prospects for stability in Russia. For program and registration information, check the Institute's Web site at www.milken-inst.org.

CALIFORNIA GETS AN A+ EXCEPT FOR EDUCATION

Prominent business, government and academic leaders speaking at "California in the 21st Century: State of the State Conference," held at the Milken Institute on Nov. 5, 1999, predicted that the state will continue to be a global economic powerhouse. The state's strong technology and entertainment industries, its ties to the growing economies of Asia and Mexico, its location as a hub for international trade and even its climate give it what it needs to maintain its growth and prosperity.

Along with this generally upbeat forecast came warnings, however, that California faces some daunting problems. Chief among these is a looming shortage of educated workers – a problem caused by changing demographics and a struggling education system, several said. For details go to the Institute's Web site and click on Events/Conferences.

MILKEN INSTITUTE HONORS ACADEMIC RESEARCHERS

Researchers at MIT, Yale, Princeton and Case Western Reserve have been named winners of the first Milken Institute Award for Distinguished Economic Research. The award was created to honor those working to further knowledge in the Institute's four major areas of concern: Global Studies; Capital Studies; Regional and Demographic Studies, and Labor Markets and Human Capital Studies. What will be an annual competition is open to everyone in the academic, business and public policy communities.

This year's winners are:

- **Kristin J. Forbes**, assistant professor of management, Massachusetts Institute of Technology.
- **Paul D. Gottlieb**, associate director of the Center for Regional Economic Issues, and **Michael Fogarty**, professor of economics at the Weatherhead School of Management at Case Western Reserve University.
- **Alan B. Krueger**, professor of economics, Princeton University.

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Latest Publications

- ***Appropriate Regulation for Emerging Markets: Financial Intermediation, Regulation and Corporate Governance*, by Thomas W. Hall.**
- ***California in the 21st Century: State of the State Briefing Book*.**
- **Proceedings of the 1999 Milken Institute Global Conference, the edited transcript.**

Publications can be ordered through the Institute's Web site (www.milken-inst.org), or by e-mail (publications@milken-inst.org), phone (310-998-2600) or mail (Milken Institute, Publications Department, 1250 Fourth Street, Santa Monica, CA 90401).

- **Jeffrey Wurgler**, assistant professor of finance at Yale School of Management.

The authors were honored Jan. 7 at a special awards ceremony during the annual Allied Social Science Association meeting in Boston. Michael Milken, chairman of the Institute, presented them with their $2,000 first-place awards. **Susanne Trimbath**, a Ph.D. candidate at New York University, won a $1,000 second-place prize.

MINISTER VISITS FROM ISRAEL

Buoyed by ongoing peace negotiations, Ran Cohen, the Israeli Minister of Industry and Trade, told a group of local Jewish and Arab leaders that the economy, not the military, is the key to the Middle East's future.

"I have the chance, as the Minister of Industry and Trade, to build the peace not by political treaties and agreements, not by military arrangements, but by the creation of jobs, by building industrial parks, by creating trade agreements with our neighbors, by open borders and by open hearts," Cohen said at the Dec. 3, 1999, meeting.

Cohen's visit was part of an ongoing dialogue between Israeli and American leaders sponsored by the Milken Institute. In September 1999, Israeli Finance Minister Avraham Shochat visited the Institute.

JERUSALEM WORKSHOPS DISCUSS ISRAELI ECONOMY

If Israel is to grow and prosper, it must reform its economy and create new markets for capital, according to government and business leaders participating in a series of workshops sponsored by the Milken Institute and the Jerusalem Center for Public Affairs.

Some 90 people from Israel, the United States, Jordan and the Palestinian Authority attended the October 10-12 meetings. They discussed such issues as capital market reform; municipal and local government reform, and ways to use cross-border investment projects to help decentralize and privatize the ongoing peace process.

NEW STAFF

The Institute welcomes two new senior staff:

- **Thomas Hall** previously worked for Bear Stearns, KPMG management consultants and the International Cultural and Trade Center Commission. He received his Ph.D. from the University of Southern California.
- **Martin Greenberger**, a professor of Information Systems at UCLA, and the director of the Anderson School's Center for Digital Media, received his Ph.D. from Harvard. M

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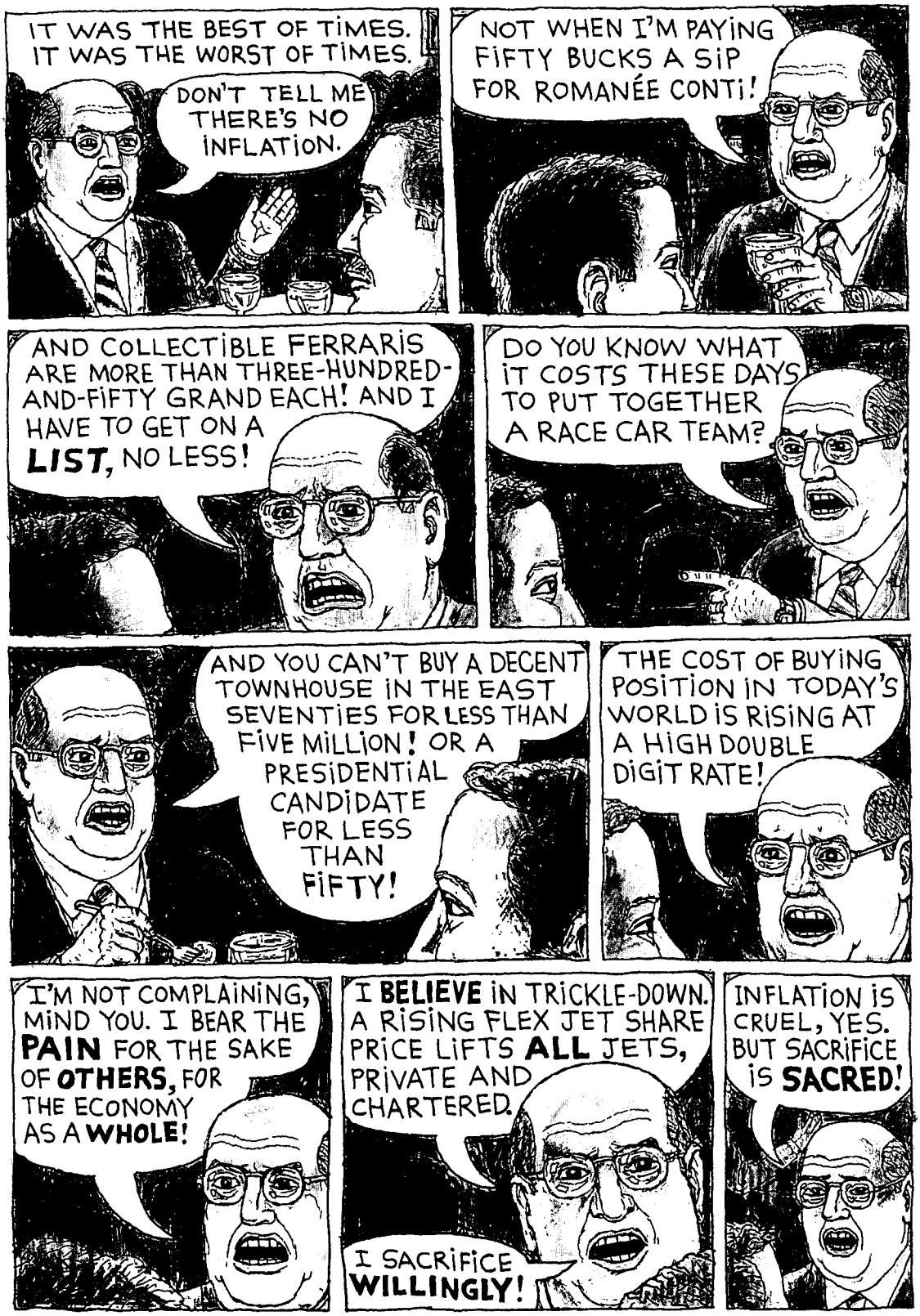
IT WAS THE BEST OF TIMES. IT WAS THE WORST OF TIMES.
DON'T TELL ME THERE'S NO INFLATION.
NOT WHEN I'M PAYING FIFTY BUCKS A SIP FOR ROMANÉE CONTI!
AND COLLECTIBLE FERRARIS ARE MORE THAN THREE-HUNDRED-AND-FIFTY GRAND EACH! AND I HAVE TO GET ON A LIST, NO LESS!
DO YOU KNOW WHAT IT COSTS THESE DAYS TO PUT TOGETHER A RACE CAR TEAM?
AND YOU CAN'T BUY A DECENT TOWNHOUSE IN THE EAST SEVENTIES FOR LESS THAN FIVE MILLION! OR A PRESIDENTIAL CANDIDATE FOR LESS THAN FIFTY!
THE COST OF BUYING POSITION IN TODAY'S WORLD IS RISING AT A HIGH DOUBLE DIGIT RATE!
I'M NOT COMPLAINING, MIND YOU. I BEAR THE PAIN FOR THE SAKE OF OTHERS, FOR THE ECONOMY AS A WHOLE!
I BELIEVE IN TRICKLE-DOWN. A RISING FLEX JET SHARE PRICE LIFTS ALL JETS, PRIVATE AND CHARTERED.
I SACRIFICE WILLINGLY!
INFLATION IS CRUEL, YES. BUT SACRIFICE IS SACRED!

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In this issue

RICHARD MEDLEY AND MATTHEW SAAL
on the Seattle debacle. Don't worry, be happy.

IRWIN STELZER
on mergers. Look who's lining whose pockets.

KEVIN MURPHY AND ROBERT TOPEL
on the economic returns to medical research.
Sky's the limit.

AL FISHLOW
on why international financial reform is on the back burner.

NICK EBERSTADT
on post-modern demographics.
Goodbye population explosion, hello population implosion.

STEVE COHEN, BRAD DELONG AND JOHN ZYSMAN
on the Brave New Economy. It really is here to stay.

TIM TAYLOR
on the Clinton legacy.
Unlucky in love, lucky in economics.

JON RAUCH
an excerpt from his book *Government's End.*

ROSS DEVOL
on the coming biotech boom.

HILTON ROOT
on the economic virtues of democracy.

A cartoon strip by
MARK ALAN STAMATY,
creator of *The Washingtoon.*

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